U.S. Environmental Protection Agency
Office of Compliance and Enforcement
1200 Pennsylvania Avenue, NW
Washington, DC 20460

CHEMOURS FIRST CHEMICAL CORPORATION
CLEAN WATER ACT (CWA)
INSPECTION AND SAMPLING

Pascagoula,
Mississippi

Report Date: January 9, 2020 (Revised 1/5/2023)

Inspection and Sampling Activities: November 19 – 21, 2019

Signature Page

Michelle Spiezio Digitally signed by Michelle Spiezio
Date: 2023.02.02 13:52:49 -05'00'

Michelle Spiezio, ERG (EPA Contractor), Lead Inspector Date

BENJAMIN BAHK Digitally signed by BENJAMIN BAHK
Date: 2023.02.03 10:15:12 -05'00'

Benjamin Bahk, U.S. EPA HQ – OCE, EPA Management Date

CONTENTS

Note: All Confidential Business Information (CBI) has been removed from this report.

1.0 Introduction

On November 19 through 21, 2019, representatives from the U.S. Environmental Protection Agency (EPA) Region 4, along with EPA contractors Eastern Research Group, Inc. (ERG) and PG Environmental (PG) (hereinafter, collectively, the Inspection and Sampling Team), conducted a Clean Water Act (CWA) inspection and sampling event at Chemours' First Chemical Corporation facility located in Pascagoula, Mississippi (hereinafter, facility or First Chemical Corp). Representatives from the Mississippi Department of Environmental Quality (MDEQ) participated in the CWA inspection. Concurrently, but separate from the CWA inspection, EPA conducted inspections under the Toxic Substances Control Act (TSCA), Clean Air Act (CAA) Risk Management Program (RMP), and Resource Conservation and Recovery Act (RCRA). This report only includes information from the CWA inspection and sampling event.

The Inspection and Sampling Team gathered information by interviewing facility representatives, conducting walk-throughs of facility process and storage areas, collecting and reviewing relevant documentation, and collecting samples at process area sumps, locations within and after wastewater pretreatment operations, and the groundwater collection system. The following are the primary representatives who participated in the CWA inspection, organized by Inspection and Sampling Team, state representatives, and key facility personnel that participated in the majority of the inspection. A sign-in sheet is included as Appendix A: Sign-In Sheet. The sign-in sheet includes representatives that participated in activities unrelated to the CWA inspection and sampling activities, who are not listed below.

Inspection and Sampling Team:	David Phillips, EPA Region 4, Water Enforcement Branch – Industrial Pretreatment Program Regional Coordinator
	Mark Robertson, EPA Region 4, Water Enforcement Branch – Enforcement Officer
	Danny O'Connell, PG, Inspector and Sampler
	Michelle Spiezio, ERG, Inspector and Sampler
State of Mississippi Representatives	Leah Drinnon, MDEQ, Environmental Compliance and Enforcement Division (ECED) – Stormwater
	Cutter Patterson, MDEQ, ECED – Water I Branch

Chemours First Chemical Corp. Representatives	Cari Field, Chemours, Business Environmental Health and Safety (EHS) Manager
	Robert Mills, Chemours First Chemical Corp, Senior EHS Consultant
	Mike Ivy, Chemours First Chemical Corp, Operations Area Manager
	Pete Schilthuis, Chemours First Chemical Corp, Operations Area Manager
	Kelvin Stork, Chemours First Chemical Corp, EHS Technician
Chemours Legal Counsel	Tom Santoro, Arnold & Porter, Attorney
	Larry Culleen, Arnold & Porter, Attorney

1.1 Purpose of the Inspection

The purpose of the inspection was to evaluate compliance with the CWA and the requirements of the facility's pretreatment and stormwater permits:

- State of Mississippi *Permit to Operate Waste Disposal System in Accordance with National and State Pretreatment Standards*, permit number MSP090360 (hereinafter, pretreatment permit).
    - Issued on June 29, 2009 and expired on February 28, 2014. Administratively continued through June 29, 2014, based on verbal conversations between the facility and MDEQ (refer to Section 1.3.1).
- State of Mississippi *Baseline Stormwater General Permit for Industrial Activities*, coverage number MSR110075 (hereinafter, stormwater permit).
    - Issued on November 17, 2015 and expires on October 31, 2020.

Because the facility has historic operations associated with per- and poly-fluoroalkyl substances (PFAS) and current operations associated with fluorotelomers, the focus of the sampling was on PFAS. The potential areas of concern observed during the inspection and sampling activities are presented in Section 4.0.

1.2 Background

Chemours' First Chemical Corporation facility is a chemical manufacturing facility that produces aniline, nitrobenzene, and 2-Nitrodiphenylamine (NDPA). In addition, the facility has a unit, referred to by the facility as the Capstone unit, that produces fluorosurfactants that are used by customers for surface coating purposes. In addition to the pretreatment and stormwater permits mentioned above, the facility has a RCRA permit for hazardous waste, and a CAA Title V permit for air emissions, including stack emissions. Refer to Section 2.0 for additional process information.

The facility is located in an industrial park in Pascagoula, Mississippi. Chemours owns and operates the entirety of the facility and property and does not have any tenants.[1] The facility was

[1] Chemours ceased production at the facility at the end of 2020 and sold the facility on June 9, 2022.

previously owned by DuPont and was acquired by Chemours as a DuPont spin-off on July 1, 2015.

The facility is an indirect discharger, discharging wastewater to the Pascagoula Publicly Owned Treatment Works (POTW) under an expired pretreatment permit MSP090360 issued by the State of Mississippi, which is the pretreatment control authority for the discharger. The pretreatment permit is intended to cover the discharge of treated, categorically regulated, wastewater comingled with other diluting flows such as non-contact cooling water, sanitary wastewater, groundwater recovery water, and stormwater from process areas. The industrial process wastewater, which is subject to federal categorical standards (40 CFR Part 414), and the recovered contaminated groundwater is pretreated by the facility through a series of pretreatment operations in the Effluent Pretreatment System. The pretreated effluent is then comingled with the diluting flows prior to discharge into the POTW. In addition, stormwater discharges from the facility are covered by the State of Mississippi's *Baseline Stormwater General Permit for Industrial Activities*, coverage number MSR110075. The discharge points presently associated with the pretreatment and stormwater permits are discussed further in Section 1.3.2.

The Jackson County Utility Authority (JCUA) provides water to the facility for use through the facility's intake. The water provided by JCUA is treated industrial wastewater (from unknown industrial sources), which the Inspection and Sampling Team sampled (refer to Section 3.0). The facility uses the JCUA water directly for process water, non-contact cooling water, and for the boilers to produce steam. The facility also takes a portion of the JCUA and treats it for use as potable water in sinks, toilets, and the on-site laundry.

1.3 Permitting and Monitoring

This section summarizes the facility's relevant permitting and monitoring considerations.

1.3.1 Pretreatment Permit

The State of Mississippi performs all control authority responsibilities for the pretreatment program pursuant to 40 CFR § 403.10(e). The State elects not to authorize any POTWs to implement the program locally; therefore, MDEQ issues pretreatment permits to all significant industrial users of POTWs and performs the required oversight and enforcement of all industrial users of POTWs in the State. EPA Region 4 has authorized Mississippi to routinely implement their pretreatment program, and pursuant to their Memorandum of Agreement, EPA may still initiate oversight of users and independently take enforcement through its statutory authorities.

The following is also highlighted in Area of Concern 1:

> The facility's pretreatment permit with the State of Mississippi expired on February 28, 2014. Facility representatives and MDEQ representatives indicated they believed the permit would be re-issued in 2020. The facility asserted that it had received verbal confirmation from MDEQ that the permit has been administratively continued but did not have this confirmation in writing. Facility representatives believed their MDEQ contact could provide this confirmation, if needed. If extended coverage was allowable, the facility would be required to obtain it from an official who is duly authorized to

provide such a statement. The pretreatment permit was issued on June 29, 2009. Pursuant to 40 CFR §403.8(f)(1)(iii)(B), pretreatment permits cannot have a total duration beyond five years. An administrative continuance, if authorized, would have ended on June 29, 2014.

DuPont, the prior owner of the facility, had submitted a pretreatment permit renewal application to the State of Mississippi in 2013 in accordance with the permit requirements; however, MDEQ did not reissue the permit after it expired in 2014. This 2013 permit application is also not reflective of the facility's current operations or ownership. The facility changed ownership from DuPont to Chemours in 2015.

With regard to operations, the 2013 permit application had proposed process wastewater discharges to the POTW from the production of telomer alcohols and perfluoroalkyl ethyl alcohols. However, facility representatives indicated these operations ceased in 2015 (current Capstone operations produce fluorotelomer surfactants and do not contribute to discharges to the POTW other than stormwater – see Sections 2.6 and 2.10.1). The 2009 pretreatment permit that expired in 2014 had also included monitoring requirements for PFOA tied to the process operations. These operations continued until 2015, which was after the pretreatment permit and its monitoring requirements had expired.

With regard to ownership, both the pretreatment permit to DuPont that expired in 2014 and the renewal application from DuPont in 2013 were not reflective of the 2015 ownership change. Contrary to the pretreatment standards that EPA has authorized Mississippi to implement (Title 11 Miss. Admin. Code Pt. 6), Chemours did not apply and obtain a valid pretreatment permit from MDEQ specific to its operations before discharging regulated categorical process wastewater to the POTW.

The following is also highlighted in Area of Concern 2:

The discharge standards in the expired pretreatment permit for Outfall 001 are categorical standards that MDEQ adjusted based on an unknown volume of stormwater and do not account for sanitary wastewater or non-contact cooling water. Adjustment of categorical pretreatment standards are only permitted when non-categorical wastewater sources are known and invariable in quantity. However, stormwater is variable by nature, thereby precluding the use of limits adjusted for stormwater dilution per 40 CFR § 403.6(e). Therefore, the discharge standards that MDEQ had applied in the expired pretreatment permit were not reliable for comparison against categorical pretreatment standards.

In addition, the expired pretreatment permit specified that the facility take 24-hour composite samples for phenol, 2-nitrophenol, 4-nitrophenol, and nitrobenzene. However, 40 CFR § 403.12(g)(3) requires that monitoring for these pollutants be done via grab sampling. The expired pretreatment permit also indicated that the limits for these pollutants were to be effective within three years of permit issuance, or by completion of the improvements needed to meet the limits, whichever timeframe came first. However, 40 CFR § 403.6(b) requires that all pretreatment necessary to meet applicable standards be in place upon discharge or within 90 days of beginning to discharge.

Note that the Inspection and Sampling Team also had observations about the location of the facility's compliance monitoring point for Outfall 001, which are described in Section 2.9.3 and Area of Concern 8.

1.3.2 Outfalls

The facility has one outfall that discharges to the POTW associated with the pretreatment permit and three outfalls associated with the stormwater permit. Table 1-1 lists each outfall, with a description of the type of discharge, associated treatment technology, and the receiving water. Note that the facility was not utilizing any of the wastewater treatment technologies to specifically treat PFAS; however, activated carbon treatment has been shown to remove specific PFAS from wastewater through adsorption. In particular, activated carbon treatment works well for longer chain PFAS like PFOA and PFOS (these were both identified at the facility, see Section 3.3) but is less effective for shorter-chain PFAS.[2] The facility was using activated carbon treatment for organic chemical removal but was not monitoring the activated carbon treatment system performance for PFAS removal (the facility was monitoring the system for other organic compounds like total organic carbon).

Table 1-1. Pretreatment and Stormwater Outfalls

Associated Permit	Outfall	Type of Discharge	Treatment	Receiving Water
Pretreatment Permit, MSP090360	Outfall 001	• Industrial wastewater • Groundwater • Stormwater from process area pads	Effluent Pretreatment System – Phenol extraction, steam stripping, activated carbon filtration, peroxide addition, and/or pH adjustment	Treated discharge is commingled with NCCW, boiler blowdown, and sanitary wastewater, then discharged to the Pascagoula POTW. The Pascagoula POTW discharges to the Pascagoula River then into the Mississippi Sound.
		• Non-contact cooling water (NCCW) • Boiler blowdown • Sanitary wastewater	None	
Stormwater Permit, MSR110075	SW001	• Stormwater from the southeast tank farm containment area	None	Discharges to an unnamed drainage ditch to Bayou Casotte.
Stormwater Permit, MSR110075	SW002	• Stormwater from the main plant, non-process areas	None	Discharges to an unnamed drainage ditch to Bayou Casotte.

[2] https://www.epa.gov/sciencematters/reducing-pfas-drinking-water-treatment-technologies
Activated carbon treatment has been reported to remove longer chain PFAS like PFOA and PFOS, which were detected at the facility (see Section 3.3).

Table 1-1. Pretreatment and Stormwater Outfalls

Associated Permit	Outfall	Type of Discharge	Treatment	Receiving Water
Stormwater Permit, MSR110075	SW003	• Stormwater from the Port storage Tank Farm	None	Discharges to an unnamed drainage ditch to Bayou Casotte.

1.3.3 Facility PFAS Monitoring

The facility has not historically and does not currently have numeric limits for the discharge of PFAS. However, Condition M-1 of the pretreatment permit requires the facility to monitor for perfluorooctanoic acid (PFOA) on a monthly basis. Facility representatives indicated that this requirement was implemented when the facility conducted telomer alcohol processing operations (also referred to as Unit 5) from 2006 – 2015 (refer to Section 2.10.1 for additional process information). However, the facility notified MDEQ in February 2016 that the telomer alcohol processing operations had ceased, at which time the facility no longer had this monitoring requirement (note this change is not reflected in the expired pretreatment permit).

The facility has conducted the following PFAS monitoring activities:

- 2006 Pascagoula Baseline Study – monitoring for PFOA and perfluorooctanesulfonic acid (PFOS) in process wastewater, effluent from the Pascagoula POTW (receiving utility for the facility), stormwater, groundwater, surface water, and water supplied by West Jackson County for farm irrigation. PFOS was intended to represent background PFAS contamination because PFOS is not associated with any of the facility's process operations.
- 2012 Pascagoula Follow Up Study – a follow up report to the 2006 baseline study in which PFOA and Perfluorohexanoic acid (PFHxA) monitoring was conducted in 2008 and 2010 at the same locations. The results of the 2006 Pascagoula Baseline Study and the 2012 Pascagoula Follow Up Study are summarized in Dillon (2015).[3]
- 2015 PFOA monitoring conducted by the facility at Outfall 001 to the POTW, per the pretreatment permit. However, as noted in Section 1.3.1 above, and in Area of Concern 2, the monitored wastestream was being diluted with unaccounted volumes of stormwater and other non-process wastewaters.
- 2019 PFAS Sampling of Intake/Outfall – The facility conducted sampling for 36 PFAS at the intake for water used in process operations and at Outfall 001 to the POTW.

A summary of the above monitoring is included in Table 1-2. A conclusion from Dillon (2015)[3] states "Cumulatively, the results of this study show that stormwater and shallow groundwater near the chemical plant appear to have elevated concentrations of PFOA and PFHxA. The PFCs [perfluorinated chemicals] from the FCC facility are likely entrained into stormwater where evaporation may concentrate PFCs, which then percolate into the shallow sand aquifer, thereby

[3] Dillon, K. S. 2015. Survey of two perfluorinated organic compounds (PFOA and PFHxA) in water and biota surrounding a polyfluorinated chemical plant. Gulf and Caribbean Research 26 (1): 21-28. Retrieved from https://aquila.usm.edu/gcr/vol26/iss1/5

resulting in the high groundwater concentrations observed in this study.... Thus, percolation into ground water appears to be the major pathway for perfluorinated chemicals to escape the production site." Refer to Section 3.3.3 for results of sampling during the inspection.

Table 1-2. Summary of PFAS Monitoring Conducted by the Facility

Sample Location	Sample Result (ng/L)							
	2006 [b]		2008 [c]		2010 [c]		2015 [d]	2019 [e]
	PFOA	PFOS	PFOA	PFHxA	PFOA	PFHxA	PFOA	PFAS (specified)
Various locations along Pascagoula River, Escatawpa River, Bayou Cassotte, Mississippi Sound	ND, NQ	ND, NQ	ND-2.9	1.3-3.7	1.5-2.9	ND-1.6	NA	NA
Effluent from Pascagoula POTW	33	NQ	17-21	22	33	14	NA	NA
West Jackson County land farm irrigation water	11	NQ	43-48	22	15	7.3	NA	NA
Intake for process water at the facility	ND	NQ	NA	NA	NA	NA	NA	[CBI redacted]
Effluent from the facility to the POTW (Outfall 001)	10	NQ	38-40	590	13	310	5-21	[CBI redacted]
Stormwater at the facility	460	2.3	480-530	590	85	140	NA	NA
Groundwater Monitoring Well 17 (near Unit 5 – see Section 2.10.1) [a]	44	NQ	1,000	790	280	520	NA	NA
Groundwater Monitoring Well 28 (southeast corner of facility, near current groundwater recovery trench – see Section 2.8.1)	NQ	ND	82-94	210	250	360	NA	NA
Groundwater Monitoring Well 63 (near Unit 6 – see Section 2.6) [a]	79	NQ	250-290	810	940	2,900	NA	NA

NA = data not available; ND = Compound not detected; NQ = Compound detected between the level of detection (LOD) and level of quantitation (LOQ)
a – Unit 5 is the unit that conducted operations to remove PFOA telomer alcohols from 2006 – 2015. Unit 6 is the unit that produces fluorosurfactants.
b – Source: 2006 Pascagoula Baseline Study.
c – Source: 2012 Pascagoula Follow Up Study.
c – Source: 2015 PFOA monitoring conducted by the facility per the pretreatment permit.
d – Source: 2019 PFAS Sampling of Intake/Outfall (conducted by the facility).

2.0 Observations by Process Area

The Inspection and Sampling Team interviewed the applicable facility personnel about each process operation. After the interviews, the Inspection and Sampling Team walked through select process areas.

The following subsections summarize the interviews and visits to these process areas, including the following information:

- Overview of operations.
- Summary of wastes produced and how they are treated or disposed. The summary focuses on liquid wastes, but also includes air emissions and solid wastes where the Inspection and Sampling Team observed or discussed such waste.
- Observations made during walk-throughs of the process areas, focusing on areas of concern.

2.1 Nitric Acid Production

2.1.1 Overview of Operations

[CBI redacted]

2.1.2 Waste Generation and Disposal

[CBI redacted]

2.1.3 Observations from Walk-Through

The Inspection and Sampling Team walked around a portion of the perimeter of this process area but did not do a detailed walk-through of the equipment and operations in this process area. Therefore, the Inspection and Sampling Team did not have any noteworthy observations in this process area.

2.2 Mononitrobenzene (MNB) Production

2.2.1 Overview of Operations

[CBI redacted]

2.2.2 Waste Generation and Disposal

[CBI redacted]

2.2.3 Observations from Walk-Through

The Inspection and Sampling Team walked around a portion of the perimeter of this process area but did not do a detailed walk-through of the equipment and operations in this process area. Therefore, the Inspection and Sampling Team did not have any noteworthy observations in this process area.

2.3 Hydrogen Production

2.3.1 Overview of Operations

[CBI redacted]

2.3.2 Waste Generation and Disposal

[CBI redacted]

2.3.3 Observations from Walk-Through

The Inspection and Sampling Team walked around a portion of the perimeter of this process area but did not do a detailed walk-through of the equipment and operations in this process area. Therefore, the Inspection and Sampling Team did not have any noteworthy observations in this process area.

2.4 Aniline Production

2.4.1 Overview of Operations

[CBI redacted]

2.4.2 Waste Generation and Disposal

[CBI redacted]

2.4.3 Observations from Walk-Through

The Inspection and Sampling Team reviewed the aniline production operations with the facility's operator in the control room. The Inspection and Sampling Team then walked through the location of the aniline production process area where process wastewater is transferred from the aniline purification process to the Effluent Pretreatment System. The Inspection and Sampling Team did not have any noteworthy observations in this process area.

2.5 Nonylated Diphenylamine Production

2.5.1 Overview of Operations

[CBI redacted]

2.5.2 Waste Generation and Disposal

[CBI redacted]

2.5.3 Observations from Walk-Through

The Inspection and Sampling Team walked around a portion of the perimeter of this process area but did not do a detailed walk-through of the equipment and operations in this process area. Therefore, the Inspection and Sampling Team did not have any noteworthy observations in this process area.

2.6 Capstone (Unit 6)

2.6.1 Overview of Operations

[CBI redacted]

2.6.2 Waste Generation and Disposal

[CBI redacted]

2.6.3 Observations from Walk-Through

The Inspection and Sampling Team walked through Unit 6, which was not in operation at the time of the inspection. [CBI redacted]

2.7 Stormwater Management

2.7.1 Overview of Operations

Stormwater from the facility is either discharged directly though the stormwater outfalls or is treated in the Effluent Pretreatment System before discharge to the POTW, depending on where the stormwater originates from on the facility property (see Table 2-1). Stormwater that is discharged through the stormwater outfalls is either collected in the facility's underground stormwater collection system or in above ground containment areas, then pumped or gravity flowed to the stormwater outfalls. Stormwater that is discharged to the POTW is collected in local process area sumps, pumped to the Rain Water Storage Tank, treated in the Effluent Pretreatment System, and ultimately commingled with other discharges to the POTW.

Table 2-1. Stormwater Handling at the Facility

Facility Area	Stormwater Management and Discharge
Concrete pads underneath process equipment, including all process areas described in this report and chemical loading/unloading areas	Collected in local area sumps, pumped to the Rain Water Storage Tank, treated through the Effluent Pretreatment System, and discharged to the POTW
Southeast Tank Farm	Collected in the Southeast Tank Farm's concrete secondary containment structure and drained via culverts and roadside ditches to Outfall SW001
Roads, parking lots, tank farms (except those mentioned elsewhere), and other non-process areas on the facility property	Collected in an underground stormwater collection system and pumped from two locations to Outfall SW002
Port Storage Tank Farm	Collected in the Port Storage Tank Farm concrete secondary containment structure and drained via culverts and roadside ditches to Outfall SW003

2.7.2 Document Review

This section summarizes the documents related to stormwater management that the Inspection and Sampling Team reviewed during and after the inspection.

Stormwater Pollution Prevention Plan (SWPPP)

The Inspection and Sampling Team reviewed the facility's Stormwater Pollution Prevention Plan (SWPPP), which was dated June 2016. Section AT5 of the stormwater permit requires the facility to develop a SWPPP according to certain provisions, including required content.

The following is also highlighted in Area of Concern 3:

Some components of the facility's SWPPP did not contain the required information stipulated in the stormwater permit.

- The facility's SWPPP includes a topographical map as Figure 1 (refer to Appendix B: SWPPP Figure); however, the topographical features are not legible on this map.
- The site map included as Figure 3 of the facility's SWPPP (refer to Appendix B: SWPPP Figure) did not contain all permit-required features. In addition, the quality of the map is such that it is difficult to discern all the features on the map. Specifically, the map either did not include the following permit-required features or these features were not discernable due to the quality of the map:
    - Location and a description of existing structural and nonstructural control measures to reduce pollutants in stormwater runoff (Section 5.2 of the SWPPP indicates the structural and nonstructural controls implemented at the facility; however, the locations of these measures are not shown in the SWPPP map),
    - Location of any stormwater treatment activities,
    - Location of any storm drain inlets,
    - Location of fuel storage and dispensing locations,
    - Location of vehicle/equipment repair, maintenance and cleaning areas,
    - Location of materials storage and handing areas,
    - Location of housekeeping practices, and
    - Stormwater conveyances (ditches, pipes, & swales) (Section 6.0 of the SWPPP indicates the use of drainage ditches, swales, and basins; however, the locations of these conveyances are not shown in the SWPPP map).
- The site map included as Figure 3 of the facility's SWPPP (refer to Appendix B: SWPPP Figure) included facility areas that are no longer active, such as the No. 3 Lagoon (previously connected to an old outfall), which was filled and stabilized with grass at the time of the inspection (refer to Photograph 2).

The following is also highlighted in Area of Concern 4:

Portions of the SWPPP were not reflective of the conditions observed during the inspection. The Inspection and Sampling Team noted the following discrepancies between the SWPPP and observed conditions at the facility:

- Section 3.0, Facility Information, only included information about some of the process operations that occur at the facility. Specifically, this section did not discuss the following products that the facility produces: nitric acid, hydrogen, and all Capstone products.

- Section 5.0, Description of Potential Storm Water Pollutant Sources, of the SWPPP does not specifically mention the hydrogen, NDPA, and Capstone process areas; however, the other process areas are specifically mentioned.

Annual SWPPP Evaluations

In addition, the Inspection and Sampling Team reviewed the past two (2017 and 2018) Annual SWPPP Evaluation Forms completed by the facility. The purpose of the annual evaluations is to ensure that the SWPPP is up-to-date and meets the appropriate requirements.

The following is also highlighted in Area of Concern 5:

> The 2017 and 2018 Annual SWPPP Evaluation Forms both indicate that the facility did not find any changes warranted to the SWPPP; however, the information noted in Area of Concern 3 and Area of Concern 4 indicate discrepancies that may warrant changes to the SWPPP. In addition, the Annual SWPPP Evaluation Form specifically includes check boxes for site map elements that are not included in the facility's site map (listed in Area of Concern 3), but the facility checked as being included on the 2017 and 2018 Annual SWPPP Evaluation Forms.

Site Inspections and Monitoring

The Inspection and Sampling Team reviewed the facility's monthly self-inspection records for 2019 and did not have any areas of concern.

The Inspection and Sampling Team asked the facility for records of monthly jar testing, required per the stormwater permit. The following is also highlighted in Area of Concern 6:

> The facility did not have documentation of monthly jar testing at the time of the inspection. The facility provided documentation of monthly testing of stormwater for pH and total organic carbon (TOC); however, these records did not include all the information required on the Monthly Visual Jar Test Inspection Form.

In addition to the above self-inspection and jar testing requirements, the facility is subject to monitoring requirements per stormwater permit Section ACT9, requirement S-2, due to the presence of Superfund Amendments and Reauthorization Act (SARA) Title III, Section 313 Water Priority Chemicals (WPC) at the facility, including aniline, benzene, MNB, nitric acid, and other chemicals. Monitoring is required if Toxics Release Inventory (TRI) reporting indicates a release of WPC to stormwater. The reviewed TRI (2016 – 2018) reports do not indicate a release of WPC to stormwater in the past three years; therefore, the facility was not required to conduct the monitoring described in stormwater permit Section ACT9, requirement S-2, for this timeframe.

Spill Logs, Employee Training

The Inspection and Sampling Team reviewed the facility's spill logs and employee training records and did not have any areas of concern.

2.7.3 Observations from Walk-Through

The Inspection and Sampling Team observed the facility's three stormwater outfalls, none of which were discharging at the time of the inspection. The Inspection and Sampling Team did not observe

any other stormwater discharges at non-outfall locations during the inspection. According to National Oceanic & Atmospheric Administration (NOAA) Climate Data Online (CDO), the last rainfall in the area was 0.58 inches on November 8, 2019.

The Inspection and Sampling Team observed the sump pump located on the southwest corner of the facility, which pumps collected stormwater from the facility's underground collection system to Outfall SW002. Facility representatives indicated that they collect grab samples from this sump for pH and TOC measurements. The Inspection and Sampling Team collected a sample from this sump (refer to Section 3.0 for sampling information).

2.8 Additional Operations

This section describes the additional operations at the facility that were not previously described but were visited or discussed during the inspection.

2.8.1 Groundwater Recovery System

In 2007, the facility installed a groundwater pump and treatment system to treat a plume of MNB and aniline in the groundwater underneath the facility property and adjacent industrial area. The groundwater recovery system included recovery wells from which groundwater was pumped, treated through the Effluent Pretreatment System, and discharged to the POTW. The facility replaced the recovery wells with a recovery trench, which is an underground trench located at the southeast corner of the facility (the point where groundwater flows off-site). Groundwater pools in the recovery trench and is pumped from the trench to the Effluent Pretreatment System for treatment then discharge to the POTW. Facility representatives estimated the top of the groundwater table is located seven to 15 feet below surface level.

Facility representatives indicated that the groundwater recovery system pumps cycle on and off depending on the level of groundwater in the trench, estimating that the system pumps approximately 100 gallons per day. The Inspection and Sampling Team sampled the groundwater from the recovery trench (refer to Section 3.0 for sampling information).

2.8.2 Sanitary Wastewater

As previously described, the facility treats a portion of the water received from the JCUA to potable water standards for use as sanitary water in toilets, sinks, and on-site laundry. The JCUA water treatment involves reverse osmosis (RO) treatment, with RO reject sent to the Effluent Pretreatment System for treatment before discharge to the POTW.

Sanitary wastewater from the toilets, sinks, and on-site laundry is combined and commingled with the treated process wastewater from Effluent Pretreatment System before being discharged to the POTW.

2.8.3 Non-Contact Cooling Water and Boiler Blowdown

The facility uses non-contact cooling water and steam produced in boilers for cooling and heating throughout the facility processes. The facility has five cooling towers (four in operation at the time of the inspection) so that non-contact cooling water can be cooled and re-used at the facility. Blowdown from the cooling towers and the boilers is collected in a pond. From the pond, the cooling tower and

boiler blowdown are mixed with the already commingled treated effluent from the Effluent Pretreatment System and sanitary wastewater in the Final Effluent Tank before being discharged to the POTW. This process is described further in Section 2.9.

2.8.4 Railcar and Truck Loading

The Inspection and Sampling Team observed the area of the facility where chemicals are unloaded from and loaded onto railcars and truck trailers. The facility has a railroad spur that runs into the loading area, where railcar tanks are rolled for loading or unloading. The Inspection and Sampling Team observed metal pans located underneath these railroad tracks to capture any leaks, spills, and stormwater. The pans drain into two sumps (Sump 21 and Sump 24), which are manually emptied to the Rain Water Storage Tank as needed (for treatment in the Effluent Pretreatment System and discharge to the POTW).

Next to the railcar loading area, the Inspection and Sampling Team observed the truck loading bay, which was a bermed concrete bay with overhead cover. Facility representatives explained that employees load or unload trucks using hoses and must follow a procedural checklist while doing so. The Inspection and Sampling Team observed a sump (Sump 22) that captures stormwater from the truck bay, which facility representatives indicated is manually emptied to the Rain Water Storage Tank, as needed. The Inspection and Sampling Team observed spill kits located in this area.

2.8.5 Hazardous Waste Drying Pad

The Inspection and Sampling Team observed an outdoor concrete pad that facility representatives indicated was used for dewatering solid hazardous waste (refer to Photograph 3). Facility representatives explained that solid hazardous waste generated at the facility is collected in trucks and placed in the drying pad to allow for dewatering. After settling occurs, the water is pumped from the drying pad to the Rain Water Storage Tank, from which it is sent to the Effluent Pretreatment System. The dewatered solids are removed from the pad and disposed of off-site as hazardous waste.

The following is also highlighted in Area of Concern 7:

> At the time of the inspection, the Inspection and Sampling Team observed solids with some pooling of liquid (refer to Photograph 4). Facility representatives explained that the solids were generated from cleaning of three stormwater sumps, specifically Sumps 21, 22, and 24, which are located at the facility's truck and rail loading/unloading area (discussed above). The facility provided records of the sump cleaning activities. The records indicated the sump cleaning for all three sumps occurred on October 25 – November 1, 2019 as a result of a five-year sump integrity inspection. The facility also provided the waste characterization form for this waste (refer to Appendix C: Rain Water Storage Tank Solids Waste Characterization Form). The waste characterization form was dated March 2016 and for "Rain Water Storage Tank Solids"; facility representatives indicated that the solids from the process area stormwater sumps is treated as the same waste as the "Rain Water Storage Tank Solids". The waste characterization form lists the waste as hazardous, based on analytical testing showing that the waste contains aniline, benzene, toluene, phenol, and other chemicals.
>
> The Inspection and Sampling Team conferred with the EPA Region 4 RCRA representative who was present at the inspection. The EPA Region 4 representative indicated the hazardous

waste drying pad is exempt under RCRA, per 40 CFR 264.1(g)(6), 265.1(c)(10), and 270.1(c)(2)(v). However, the waste characterization form indicates that the waste is subject to the Benzene Waste Operations National Emission Standards for Hazardous Air Pollutants (NESHAP). The Inspection and Sampling Team did not review the requirement of the Benzene Waste Operations NESHAP.

2.9 Effluent Pretreatment System

2.9.1 Overview of Operations

A diagram of the sources of wastewater produced at the facility and how they are managed and treated through the pretreatment system is included as Appendix D.

[CBI redacted]

2.9.2 Waste Generation and Disposal

[CBI redacted]

2.9.3 Observations from Walk-Through

The Inspection and Sampling Team first went through the facility's Effluent Pretreatment System operations in the facility's control room. The Inspection and Sampling Team reviewed the facility's work order system for maintenance and repair activities and then reviewed the facility's operations logs. Specifically, the Inspection and Sampling Team reviewed:

- Carbon column breakthrough log (dated 11/19/2019): [CBI redacted]
- Inside effluent log sheets (dated 11/4/2019 – 11/17/2019): [CBI redacted]

The Inspection and Sampling Team then walked through the Effluent Pretreatment System process area, which is depicted in Appendix D: Wastewater Flow and Treatment Diagram. The Inspection and Sampling Team observed that the carbon from Carbon Column 1 was changed out the week of the inspection. The facility changes out carbon based on daily breakthrough monitoring (described in Section 2.9.1 CBI descriptions). Facility representatives provided the associated waste manifest for the carbon change out the week of the inspection, which lists Calgon Carbon Corporation in Catlettsburg, KY as the site receiving the spent carbon. The Inspection and Sampling Team observed sample ports for the effluent from the three carbon columns, where the facility samples for breakthrough as described above. The Inspection and Sampling Team sampled the effluent from Carbon Columns 1 and 2 (the Inspection and Sampling Team did not sample Carbon Column 3 because this carbon column discharges to Carbon Column 1). The Inspection and Sampling Team also observed a sample port in the piping that conveys wastewater from the pH Adjustment Tank to the Blend Tank, before the wastewater commingles with other streams. The Inspection and Sampling Team took a sample from this port (refer to Section 3.0 for sampling information).

The Inspection and Sampling Team observed the Final Effluent Tank and the discharge point to the POTW, which is the location of the facility's compliance monitoring point. The following is also highlighted in Area of Concern 8:

The location where the Inspection and Sampling Team observed that the facility conducts

compliance monitoring for all of the pretreatment permit standards, including 40 CFR Part 414 categorical standards, is located along the pipe that conveys effluent to the POTW, at a point after the pretreated process discharge commingles with the dilution sources from sanitary wastewater, non-contact cooling water, stormwater, and boiler blow down (refer to Photograph 5 and Photograph 6). The pretreated process wastewater effluent that is subject to the categorical standards is therefore diluted at this location, precluding a direct comparison against both the pretreatment permit per condition L-2 and the applicable 40 CFR Part 414 standards.

The Inspection and Sampling Team observed that the facility has an existing sample tap between the pH Adjustment Tank and the Blend Tank, which is located before the pretreated effluent from the pH Adjustment Tank is commingled with other streams (refer to Photograph 7). This sample tap location appears to be consistent with condition L-2 of the pretreatment permit and 40 CFR § 403.6(d) and, if used by MDEQ and the facilities, samples from this location would allow for compliance monitoring of 40 CFR Part 414 categorical standards.

At the facility's compliance monitoring point described above, the Inspection and Sampling Team observed the facility's composite sampler (refer to Photograph 5). The following is also highlighted in Area of Concern 9:

Facility representatives explained the sampling procedures, indicating that the facility measures the temperature of composite samples when they are removed from the composite sampler's mini refrigerator by inserting a thermometer in the sample. With this method, the facility only knows the temperature of the sample once it's removed from the refrigerator and would not know the temperature of the refrigerator during the entire sampling period to ensure the preservation requirements are met. The Inspection and Sampling Team recommended that the facility monitor temperature by having a thermometer in a jar of water stored in the mini refrigerator.

Facility representatives explained that the composite sampler samples 50 mL from the discharge to the POTW every hour over the course of 24-hours. The facility uses this for pollutants requiring composite sampling per the pretreatment permit. For the pollutants for which the pretreatment permit requires grab samples, the facility uses a sample tap on the pipe discharging to the POTW to collect four grab samples throughout a 24-hour time period, consistent with the pretreatment permit requirements. The following is also highlighted in Area of Concern 10:

The Inspection and Sampling Team reviewed the facility's sampling log for grab samples taken for compliance monitoring per the pretreatment permit. The sampling log listed grab sample times that were all rounded to the nearest hour, as opposed to exact times.

The Inspection and Sampling Team inspected the pH probe at the facility's compliance monitoring point. Facility representatives indicated that pH probes are calibrated bi-weekly with three buffer solutions of pH 4 SU, 7 SU, and 10 SU. Facility representatives provided calibration records for the past two bi-weekly calibrations, which showed the pH meters that were calibrated, information about the buffer solutions, and pH readings before and after calibration with the buffer solutions (showing that the pH meters were calibrated).

2.10 Additional Considerations

2.10.1 Historic Telomer Alcohol Processing (Unit 5)

[CBI redacted]

2.10.2 Pascagoula POTW

The Inspection and Sampling Team visited the Pascagoula POTW at approximately 2:00 pm on November 21, 2019. The visit was unannounced, and the Inspection and Sampling Team spoke with Carrie Dennis, Operations and Maintenance Manager, and Alex Dixon, Compliance Supervisor, collectively referred to as the POTW representatives.

The POTW representatives indicated that the POTW experiences issues from batch discharges from industry, including foaming at the POTW headworks and drifting of the biology in the secondary treatment system. POTW representatives explained that the POTW collects samples from the pump station that services multiple industrial users in the service area (including the facility) on a biweekly basis and can provide these data to EPA, if needed.

3.0 Sampling

This section summarizes the Inspection and Sampling Team's sampling activities at the facility, including the analytical results for the water samples collected during the inspection, which were all collected on November 21, 2019.

3.1 Introduction

All samples were analyzed for the following PFAS analytes, organized below with the corresponding Chemical Abstracts Service (CAS) number:

Analyte	**CAS No.**
Perfluorobutane sulfonic acid (PFBS)	375-73-5
Perfluorohexane sulfonic acid (PFHxS)	355-46-4
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8
Perfluorooctane sulfonic acid (PFOS)	1763-23-1
Perfluorodecane sulfonic acid (PFDS)	335-77-3
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorooctanoic acid (PFOA)	335-67-1
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnDA)	2058-94-8
Perfluorododecanoic acid (PFDoDA)	307-55-1
Perfluorotridecanoic acid (PFTrDA)	72629-94-8
Perfluorotetradecanoic acid (PFTeDA)	376-06-7
Perfluorooctanesulfonamide (FOSA)	754-91-6

Analyte	CAS No.
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	2355-31-9
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	2991-50-6
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	13252-13-6

3.2 Sampling Locations

The Inspection and Sampling Team collected eight water samples, a duplicate, a field blank, and a trip blank. Table 3-1 summarizes the samples taken, including the sample point location, sample description, and date and time that the sample was taken. All samples were liquid and were analyzed for the PFAS listed above.

Table 3-1. Sample Identification

Sample ID	Sampling Point Location	Sample Description	Date and Time
SP-POTW	Pipe to the Pascagoula POTW	Wastewater sample from the tap on the pipe that conveys effluent from the facility to the Pascagoula POTW, which is the location where the facility performs monitoring for the pretreatment permit. This wastewater includes treated process wastewater from the Effluent Pretreatment System commingled with sanitary wastewater, NCCW, and boiler blowdown. The system was flushed for approximately 30 seconds before a sample was taken. Sample was clear liquid with a brown tint and no visible solids.	11/21/2019, 9:43 a.m.
SP-SWS	Stormwater sump on the southwest corner of the facility	Stormwater sample taken with a dipper pole from the stormwater sump on the southwest corner of the facility property, which discharges through Outfall SW002. There was no recent rain event and stormwater in the sump was stagnant. Sample was liquid with a brown tint and some visible solids.	11/21/2019, 9:57 a.m.
SP-CC1	Effluent from Carbon Column 1 in the Effluent Pretreatment System	Process wastewater sample from the tap on the effluent line from an activated carbon bed, Carbon Bed 1, located in the Effluent Pretreatment System. The system was flushed for approximately 30 seconds before a sample was taken. Sample was clear liquid with no visible tint and no visible solids.	11/21/2019, 10:26 a.m.
SP-CC2	Effluent from Carbon Column 2 in the Effluent Pretreatment System	Process wastewater sample from the tap on the effluent line from an activated carbon bed, Carbon Bed 2, located in the Effluent Pretreatment System. The system was flushed for approximately 30 seconds before a sample was taken. Sample was clear liquid with no visible tint and no visible solids.	11/21/2019, 10:32 a.m.

Table 3-1. Sample Identification

Sample ID	Sampling Point Location	Sample Description	Date and Time
SP-PH1	Effluent from pH Adjustment Tank in the Effluent Pretreatment System	Process wastewater sample from the tap on the effluent line from the pH adjustment tank, located in the Effluent Pretreatment System, before the treated process wastewater is mixed with sanitary wastewater, NCCW, and boiler blow-down. The system was flushed for approximately 30 seconds before a sample was taken. Sample was clear liquid with a slight brown tint and no visible solids.	11/21/2019, 10:37 a.m.
SP-PH2	Effluent from pH Adjustment Tank in the Effluent Pretreatment System	Duplicate sample taken at same location and same time as SP-PH1. Sample was clear liquid with a slight brown tint and no visible solids.	11/21/2019, 10:38 a.m.
SP-6TF	Stormwater sump for the #6 Tank Farm in the Capstone process area (Unit 6)	Stormwater sample taken by hand dipping into the stormwater sump for the #6 Tank Farm. The last rain event was on November 8, 2019, and stormwater in the sump was stagnant and at a low level. Sample was liquid with a brown tint and some visible solids.	11/21/2019, 11:08 a.m.
SP-JCW	Intake for process water from the Jackson County Water Authority	Influent water sample from the tap on the intake from the Jackson County Water Authority. The system was flushed for approximately 2 minutes before a sample was taken. Sample was clear liquid with no visible tint and no visible solids.	11/21/2019, 11:23 a.m.
SP-GW	Groundwater recovery trench	Groundwater sample taken from the tap on the groundwater recovery trench. The system was flushed for a volume of approximately 8 gallons before a sample was taken. Sample was clear liquid with no visible color or solids.	11/21/2019, 11:40 a.m.
Field Blank	Field Blank – Capstone process area	PFAS-free water provided by ALS Environmental. Transferred in Capstone process area.	11/21/2019, 11:15 a.m.
Trip Blank	Trip Blank	PFAS-free water provided by ALS Environmental.	Not applicable.

3.3 Results

This section includes discussion of the analytical results of the 11 samples listed in Table 3-1, field blank, and trip blank.

3.3.2 Quality Control

The sample results for the field blank and the trip blank were below the reporting limit for all PFAS analytes.

The laboratory also conducted analyses on two method blanks and two laboratory control

samples. All PFAS analytes measured in the method blanks were below the reporting limit. The percent recovery for all PFAS analytes were within control limits, except for PFBS on one laboratory control sample and one method blank. However, the laboratory case narrative indicates "the limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure."

Surrogate recovery for 6:2 FTS in sample SP-6TF exceeded the upper control limit due to matrix interference. The sample was reanalyzed with similar results, with a 2,451 percent and 2,437 percent recovery for the two analyses of sample SP-6TF. Due to the high percent recovery, the reported value for this analyte in SP-6TF are affected (the result is likely higher than the actual value). The result for this analyte in SP-6TF is not acceptable for use based on the high percent recovery.

Additional discussion on the laboratory's quality assurance and quality control analyses is included in Appendix E: Sample Quality Assurance/Quality Control Discussion. Information on the exchange of samples and laboratory analysis by ALS Environmental is provided in the chain-of-custody forms in Appendix F: Chain of Custody Form.

Based on the results of the quality control analysis, and the information in Appendix E: Sample Quality Assurance/Quality Control Discussion, ERG determined that the sampling data described in this sample summary are acceptable for use, except for the result for the analyte 6:2 FTS in sample SP-6TF due to matrix interference.

3.3.3 Field Sample Results

Table 3-5, Table 3-6, and Table 3-7 present the results of the PFAS analyses and the associated reporting limits. As discussed above, the laboratory analyzed the sample SP-6TF twice. The relative percent difference (RPD) between these samples is less than 30 percent for all analytes; the results of the first analysis are presented. Reporting limits may be elevated due to dilutions, which are required due to the presence of elevated levels of target analytes. The permit does not include limits for PFAS to which these results can be compared.

The sample results are discussed and summarized below. Summaries of results are presented in:

- Table 3-2, which contains data from samples taken at the intake, Effluent Pretreatment System, and Outfall 001 (discharge to POTW).
- Table 3-3, which contains data from samples related to stormwater and groundwater at the facility.
- Table 3-4, which shows PFAS monitoring results for groundwater underneath the site, including historical sampling conducted by the facility (refer to Section 1.3.3) and sampling of the groundwater recovery trench during the inspection.

Table 3-2 summarizes results for the facility's intake for process water, sample locations associated with the Effluent Pretreatment System, and the facility's discharge to the POTW. The following is also highlighted in Area of Concern 11:

> The results for the intake (SP-JCW) and all sample points within the Effluent

Pretreatment System (SP-CC1, SP-CC2, SP-PH1, and SP-PH2) show that all 28 analytes were non-detect or below the reporting limit. The results for the sample of the effluent to the POTW (SP-POTW) show detection of seven analytes, all with levels below 0.18 µg/L. Since the effluent from the pH Adjustment Tank (SP-PH1 and SP-PH2) was non-detect or below the reporting limit for all 28 analytes, the presence of the seven detected analytes in the effluent to the POTW (SP-POTW) may be from the sanitary wastewater or the non-contact cooling water and boiler blowdown (collected in an outdoor lagoon), which are commingled with the effluent from the pH Adjustment Tank before discharge to the POTW, or from another unknown source such as buildup in equipment or the lagoon that collects non-contact cooling water and boiler blowdown. The source of potable water at the facility is the intake (SP-JCW) (refer to Section 2.8.2).

Table 3-2. Summary of Sampling Results for Intake, Effluent Pretreatment System, and Discharge to POTW

Sample	Associated Process Area	Result Notes
SP-JCW	Intake for process water from the Jackson County Water Authority	• All 28 analytes were non-detect or below the reporting limit.
SP-CC1	Effluent from Carbon Column 1 in the Effluent Pretreatment System	• All 28 analytes were non-detect or below the reporting limit.
SP-CC2	Effluent from Carbon Column 2 in the Effluent Pretreatment System	• All 28 analytes were non-detect or below the reporting limit.
SP-PH1 and PH2	Effluent from pH Adjustment Tank in the Effluent Pretreatment System (including duplicate sample)	• All 28 analytes were non-detect or below the reporting limit.
SP-POTW	Effluent discharged to the POTW (includes wastewater from Effluent Pretreatment System, sanitary wastewater, NCCW, and boiler blowdown)	• 21 of 28 analytes were non-detect or below the reporting limit. • The remaining analytes were all detected at levels below 0.18 µg/L.

Table 3-3 summarizes the sampling results for the samples associated with the stormwater collection system and the groundwater recovery trench. The following is also highlighted in Area of Concern 11:

In both samples associated with the facility's stormwater collection system (SP-SWS and SP-6TF), high levels of PFAS were detected relative to the other samples taken at the facility. In the sample taken at the stormwater sump on the southwest corner of the facility property (SP-SWS), which discharges to stormwater Outfall SW002, 18 of the 28 analytes analyzed were detected at levels above the reporting limit. Three of these analytes, PFHxA, PFOA, and 6:2 FTS were detected at 2.7 µg/L, 1.3 µg/L, and 1.5 µg/L, respectively. The stormwater from this sump is discharged through stormwater Outfall

SW002 to an unnamed drainage ditch to Bayou Cassotte without treatment. The facility samples the stormwater for pH and TOC before discharging; however, the facility does not sample the stormwater for PFAS.

The sampling results for the sample taken at the sump located in the #6 Tank Farm in the Capstone (Unit 6) process area (SP-6TF) showed analytes at much higher concentrations, with 15 of the 28 PFAS analytes detected above the reporting limit at concentrations ranging from 2.1 µg/L to 150 µg/L. Some of the analytes with the highest concentrations include fluorotelomer-related PFAS, with 4:2 FTS and 8:2 FTS measured at 92 µg/L and 150 µg/L, respectively (note that 6:2 FTS was detected at a high concentration of 53,000 µg/L; however, this value is unreliable due to matrix interference). The facility produces fluorotelomer surfactants in the Capstone (Unit 6) process area (refer to Section 2.6). Stormwater from the sump that was sampled and other stormwater sumps in the Capstone (Unit 6) process area are sent to the Effluent Pretreatment System for treatment before discharge to the POTW. The facility was not discharging stormwater from Capstone (Unit 6) to the Effluent Pretreatment System at the time of the inspection and sampling activities; thus, the samples taken at the Effluent Pretreatment System are not representative of when stormwater from Capstone (Unit 6) is being treated and discharged.

Table 3-3. Summary of Sampling Results for Stormwater and Groundwater

Sample	Associated Process Area	Result Notes
SP-SWS	Stormwater sump on the southwest corner of the facility property (discharges to stormwater Outfall SW002)	• 10 of 28 analytes were non-detect or below the reporting limit. • The remaining analytes were detected at levels below 1 µg/L except for the following: o PFHxA = 2.7 µg/L o PFOA = 1.3 µg/L o 6:2 FTS = 1.5 µg/L
SP-6TF	Stormwater sump for the #6 Tank Farm in the Capstone process area (Unit 6) (sent to the Effluent Pretreatment System)	• 13 of 28 analytes were non-detect or below the reporting limit. • The remaining analytes were detected at: o PFBA = 5 µg/L o PFPeA = 8 µg/L o PFHxA = 61 µg/L o PFHpA = 25 µg/L o PFOA = 9.1 µg/L o PFNA = 6 µg/L o PFDA = 33 µg/L o PFUnDA = 12 µg/L o PFDoDA = 19 µg/L o PFTrDA = 2.1 µg/L o PFTeDA = 2.7 µg/L o 4:2 FTS = 92 µg/L o 6:2 FTS = 53,000 µg/L [a] o 8:2 FTS = 150 µg/L o 10:2 FTS = 28 µg/L
SP-GW	Groundwater	• 13 of 28 analytes were non-detect or below the reporting limit.

Table 3-3. Summary of Sampling Results for Stormwater and Groundwater

Sample	Associated Process Area	Result Notes
	recovery trench (sent to the Effluent Pretreatment System)	• The remaining analytes were all detected at levels below 1 µg/L. However, the following PFAS were detected at levels above 100 ng/L: o PFOS = 92 ng/L o PFHxA = 390 ng/L o PFOA = 140 ng/L o PFBA = 180 ng/L o PFPeA = 620 ng/L o PFHpA = 240 ng/L o 6:2 FTS = 550 ng/L

a – The percent recovery for this analyte exceeded the laboratory control limits due to matrix interference such that this value is not acceptable for use. Refer to Appendix E: Sample Quality Assurance/Quality Control Discussion for additional information.

The following is also highlighted in Area of Concern 11:

> The sample from the groundwater recovery trench (SP-GW) shows 15 analytes detected above the reporting limit. Groundwater extracted from the groundwater recovery trench (SP-GW) is treated through the Effluent Pretreatment System before being discharged to the POTW.
>
> As discussed in Section 1.3.3, previous groundwater monitoring for PFAS has been conducted by the facility at monitoring wells located on the facility property. These data also show the presence of PFAS in groundwater. Table 3-4 summarizes PFAS concentrations from historic groundwater sampling at the facility (which only included sampling for PFOS, PFOA, and PFHxA) and sampling conducted during the inspection. The data in Table 3-4 show the presence of PFAS in groundwater underneath the site, with varying concentrations over 2010 through the time of the inspection.

Table 3-4. Summary of Groundwater Monitoring for PFAS

Analyte	Sample result (ng/L)			
	2006 [a] (sampling done at monitoring wells)	2008 [a] (sampling done at monitoring wells)	2010 [a] (sampling done at monitoring wells)	2019 [b] (sampling done at groundwater recovery trench, SP-GW)
PFOS	<reporting limit	NA	NA	92
PFOA	44 – 79	82 – 1,000	250 – 940	140
PFHxA	NA	210 – 810	360 – 2,900	390
Other PFAS	NA	NA	NA	Refer to Table 3-3

NA = data not available
a – Results are from historic groundwater sampling conducted by the facility. Refer to Section 1.3.3 for additional details.
b – Results are from sampling conducted during the inspection for sample SP-GW, which is summarized in Table 3-3.

Table 3-5. Summary of PFAS Sample Results – Discharge to POTW, Southwest Stormwater Sump, Carbon Column 1, and Carbon Column 2

Analyte	Value (µg/L)							
	Discharge to POTW		Southwest Stormwater Sump		Carbon Column 1		Carbon Column 2	
	SP-POTW Result	Reporting Limit	SP-SWS Result	Reporting Limit	SP-CC1 Result	Reporting Limit	SP-CC2 Result	Reporting Limit
Perfluorobutane sulfonic acid (PFBS)	0.00077 J	0.0045	0.0026 J	0.0042	ND	0.0045	ND	0.0044
Perfluorohexane sulfonic acid (PFHxS)	0.0014 J	0.0045	0.0086	0.0042	ND	0.0045	ND	0.0044
Perfluoroheptane sulfonic acid (PFHpS)	ND	0.0045	0.00063 J	0.0042	ND	0.0045	ND	0.0044
Perfluorooctane sulfonic acid (PFOS)	0.0015 J	0.0045	0.021	0.0042	ND	0.0045	ND	0.0044
Perfluorodecane sulfonic acid (PFDS)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
Perfluorobutanoic acid (PFBA)	0.0097	0.0045	0.45	0.0042	ND	0.0045	0.0024 J	0.0044
Perfluoropentanoic acid (PFPeA)	0.021	0.0045	0.98	0.042	ND	0.0045	ND	0.0044
Perfluorohexanoic acid (PFHxA)	0.016	0.0092	2.7	0.092	ND	0.0092	ND	0.0092
Perfluoroheptanoic acid (PFHpA)	0.0046	0.0045	0.84	0.042	ND	0.0045	ND	0.0044
Perfluorooctanoic acid (PFOA)	0.0026	0.0018	1.3	0.017	ND	0.0018	ND	0.0018
Perfluorononanoic acid (PFNA)	ND	0.0045	0.32	0.0042	ND	0.0045	ND	0.0044
Perfluorodecanoic acid (PFDA)	0.0028 J	0.0045	0.53	0.0042	ND	0.0045	ND	0.0044
Perfluoroundecanoic acid (PFUnDA)	ND	0.0045	0.11	0.0042	ND	0.0045	ND	0.0044
Perfluorododecanoic acid (PFDoDA)	0.0016 J	0.0045	0.64	0.042	ND	0.0045	ND	0.0044
Perfluorotridecanoic acid (PFTrDA)	ND	0.0045	0.19	0.0042	ND	0.0045	ND	0.0044
Perfluorotetradecanoic acid (PFTeDA)	ND	0.0045	0.15	0.0042	ND	0.0045	ND	0.0044
Perfluorooctanesulfonamide (FOSA)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
N-Methyl perfluorooctane sulfonamide (MeFOSA)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	0.00062 J	0.0045	ND	0.0042	0.00027 J	0.0045	0.00039 J	0.0044
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	0.0045	ND	0.0042	ND	0.0045	ND	0.0044
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	0.0011 J	0.0045	0.0088	0.0042	ND	0.0045	ND	0.0044
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.18	0.0045	1.5	0.42	0.0013 J	0.0045	0.0042 J	0.0044
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.0047	0.0045	0.42	0.042	ND	0.0045	0.00016 J	0.0044

Table 3-5. Summary of PFAS Sample Results – Discharge to POTW, Southwest Stormwater Sump, Carbon Column 1, and Carbon Column 2

Analyte	Value (µg/L)							
	Discharge to POTW		Southwest Stormwater Sump		Carbon Column 1		Carbon Column 2	
	SP-POTW Result	Reporting Limit	SP-SWS Result	Reporting Limit	SP-CC1 Result	Reporting Limit	SP-CC2 Result	Reporting Limit
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	0.0014 J	0.0045	0.045	0.0042	ND	0.0045	ND	0.0044
2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy) propanoic Acid (HFPA-DA) (i.e., GenX)	0.00047 J	0.0045	0.0051	0.0042	0.00036 J	0.0045	0.00048 J	0.0044

ND – Analyte not detected.
J – Sample results were above the method detection limit but below the reporting limit.

Table 3-6. Summary of PFAS Sample Results – pH Adjustment Tank, Duplicate of pH Adjustment Tank, Stormwater Sump for #6 Tank Farm, Water Intake

Analyte	Value (µg/L)							
	pH Adjustment Tank		Duplicate of SP-PH1		Stormwater Sump for #6 Tank Farm		Water Intake	
	SP-PH1 Result	Reporting Limit	SP-PH2 Result	Reporting Limit	SP-6TF Result	Reporting Limit	SP-JCW Result	Reporting Limit
Perfluorobutane sulfonic acid (PFBS)	ND	0.0044	ND	0.0045	ND	1	0.00039 J	0.0045
Perfluorohexane sulfonic acid (PFHxS)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
Perfluoroheptane sulfonic acid (PFHpS)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
Perfluorooctane sulfonic acid (PFOS)	ND	0.0044	ND	0.0045	ND	0.5	0.001 J	0.0045
Perfluorodecane sulfonic acid (PFDS)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
Perfluorobutanoic acid (PFBA)	0.0011 J	0.0044	0.0012 J	0.0045	5	1	0.0015 J	0.0045
Perfluoropentanoic acid (PFPeA)	ND	0.0044	ND	0.0045	8	1	ND	0.0045
Perfluorohexanoic acid (PFHxA)	ND	0.0092	ND	0.0092	61	1	ND	0.0092
Perfluoroheptanoic acid (PFHpA)	ND	0.0044	ND	0.0045	25	1	ND	0.0045
Perfluorooctanoic acid (PFOA)	ND	0.0018	ND	0.0018	9.1	0.5	ND	0.0018
Perfluorononanoic acid (PFNA)	ND	0.0044	ND	0.0045	6	1	ND	0.0045
Perfluorodecanoic acid (PFDA)	ND	0.0044	ND	0.0045	33	1	ND	0.0045
Perfluoroundecanoic acid (PFUnDA)	ND	0.0044	ND	0.0045	12	1	ND	0.0045
Perfluorododecanoic acid (PFDoDA)	ND	0.0044	ND	0.0045	19	1	ND	0.0045
Perfluorotridecanoic acid (PFTrDA)	ND	0.0044	ND	0.0045	2.1	1	ND	0.0045
Perfluorotetradecanoic acid (PFTeDA)	ND	0.0044	ND	0.0045	2.7	1	ND	0.0045
Perfluorooctanesulfonamide (FOSA)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
N-Methyl perfluorooctane sulfonamide (MeFOSA)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	0.00033 J	0.0044	ND	0.0045	ND	1	ND	0.0045
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	0.00051 J	0.0044	ND	0.0045	ND	1	ND	0.0045
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	0.0044	ND	0.0045	ND	1	ND	0.0045
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	ND	0.0044	ND	0.0045	92	10	ND	0.0045
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.0036 J	0.0044	0.015	0.0045	53000	1000	0.00066 J	0.0045
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	ND	0.0044	ND	0.0045	150	10	ND	0.0045

Table 3-6. Summary of PFAS Sample Results – pH Adjustment Tank, Duplicate of pH Adjustment Tank, Stormwater Sump for #6 Tank Farm, Water Intake

Analyte	Value (µg/L)							
	pH Adjustment Tank		Duplicate of SP-PH1		Stormwater Sump for #6 Tank Farm		Water Intake	
	SP-PH1 Result	Reporting Limit	SP-PH2 Result	Reporting Limit	SP-6TF Result	Reporting Limit	SP-JCW Result	Reporting Limit
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	ND	0.0044	ND	0.0045	28	1	ND	0.0045
2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy) propanoic Acid (HFPA-DA) (i.e., GenX)	0.0004 J	0.0044	0.0026 J	0.0045	ND	1	0.00037 J	0.0045

ND – Analyte not detected.
J – Sample results were above the method detection limit but below the reporting limit.

Table 3-7. Summary of PFAS Sample Results – Groundwater Recovery Trench, Field Blank, and Trip Blank

Analyte	Value (µg/L)					
	Groundwater Recovery Trench		Field Blank		Trip Blank	
	SP-GW Result	Reporting Limit	Field Blank Result	Reporting Limit	Trip Blank Result	Reporting Limit
Perfluorobutane sulfonic acid (PFBS)	0.0088	0.0049	ND	0.0045	0.00041 J	0.0045
Perfluorohexane sulfonic acid (PFHxS)	0.045	0.0049	ND	0.0045	ND	0.0045
Perfluoroheptane sulfonic acid (PFHpS)	0.0027 J	0.0049	ND	0.0045	ND	0.0045
Perfluorooctane sulfonic acid (PFOS)	0.092	0.0049	ND	0.0045	ND	0.0045
Perfluorodecane sulfonic acid (PFDS)	ND	0.0049	ND	0.0045	ND	0.0045
Perfluorobutanoic acid (PFBA)	0.18	0.0049	ND	0.0045	ND	0.0045
Perfluoropentanoic acid (PFPeA)	0.62	0.0049	ND	0.0045	ND	0.0045
Perfluorohexanoic acid (PFHxA)	0.39	0.0098	ND	0.0092	ND	0.0092
Perfluoroheptanoic acid (PFHpA)	0.24	0.0049	ND	0.0045	ND	0.0045
Perfluorooctanoic acid (PFOA)	0.14	0.002	ND	0.0018	ND	0.0018
Perfluorononanoic acid (PFNA)	0.033	0.0049	ND	0.0045	ND	0.0045
Perfluorodecanoic acid (PFDA)	0.032	0.0049	ND	0.0045	ND	0.0045
Perfluoroundecanoic acid (PFUnDA)	0.0069	0.0049	ND	0.0045	ND	0.0045
Perfluorododecanoic acid (PFDoDA)	0.0059	0.0049	ND	0.0045	ND	0.0045
Perfluorotridecanoic acid (PFTrDA)	ND	0.0049	ND	0.0045	ND	0.0045
Perfluorotetradecanoic acid (PFTeDA)	ND	0.0049	ND	0.0045	ND	0.0045
Perfluorooctanesulfonamide (FOSA)	0.00061 J	0.0049	ND	0.0045	ND	0.0045
N-Methyl perfluorooctane sulfonamide (MeFOSA)	ND	0.0049	ND	0.0045	ND	0.0045
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	0.00046 J	0.0049	ND	0.0045	ND	0.0045
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	ND	0.0049	ND	0.0045	ND	0.0045
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	0.0009 J	0.0049	ND	0.0045	ND	0.0045
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	ND	0.0049	ND	0.0045	ND	0.0045
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	ND	0.0049	ND	0.0045	ND	0.0045
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	0.014	0.0049	ND	0.0045	ND	0.0045
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.55	0.049	ND	0.0045	0.00073 J	0.0045
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.043	0.0049	ND	0.0045	ND	0.0045
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	0.0014 J	0.0049	ND	0.0045	ND	0.0045
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.00062 J	0.0049	ND	0.0045	0.00034 J	0.0045

ND – Analyte not detected.
J – Sample results were above the method detection limit but below the reporting limit.

4.0 Areas of Concern

The CWA Areas of Concern referred to in the narrative of this report are summarized as follows:

Area of Concern 1

40 CFR § 403(f)(1)(iii)(B) specifies that the duration of industrial user (pretreatment) permits may not exceed five years. The facility's pretreatment permit with the State of Mississippi expired on February 28, 2014. Facility representatives and MDEQ representatives indicated they believed the permit would be re-issued in 2020. The facility asserted that it had received verbal confirmation from MDEQ that the permit had been administratively continued, but did not have this confirmation in writing. Facility representatives believed their MDEQ contact could provide this confirmation, if needed. If extended coverage were allowable, the facility would be required to obtain it from an official who is duly authorized to provide such a statement. The pretreatment permit had been issued on June 29, 2009. Pursuant to the five-year limitation for pretreatment permits in 40 CFR § 403.8(f)(1)(iii)(B), an administrative continuance, if authorized, would have only extended the expiration to June 29, 2014.

Further, condition number T-22 of the pretreatment permit states "Any facility expansion, production increases, process modifications, changes in discharge volume or location or other changes in operations or conditions of the permittee which may result in a new or increased discharge of waste, shall be reported to the Permit Board by submission of a new application for a permit pursuant to Chapter One, Section II.A. of the Mississippi Wastewater Regulations, or if the discharge does not violate effluent limitations specified in the permit, by submitting to the Permit Board a notice of a new or increased discharge."

DuPont, the prior owner of the facility, had submitted a pretreatment permit renewal application to the State of Mississippi in 2013 in accordance with the permit requirements; however, MDEQ did not reissue the permit after it expired in 2014. This 2013 permit application was also not reflective of the facility's current operations or ownership. The facility changed ownership from DuPont to Chemours in 2015.

With regard to operations, the 2013 permit application had proposed process wastewater to the POTW from the production of telomer alcohols and perfluoroalkyl ethyl alcohols. However, facility representatives indicated these operations ceased in 2015 (current Capstone operations produce fluorotelomer surfactants and do not contribute to discharges to the POTW other than stormwater – see Sections 2.6 and 2.10.1). The 2009 pretreatment permit that expired in 2014 had also included monitoring requirements for PFOA tied to the process operations. These operations continued until 2015, which was after the pretreatment permit and its monitoring requirements had expired.

With regard to ownership, both the pretreatment permit to DuPont that expired in 2014 and the renewal application from DuPont in 2013 were not reflective of the 2015 ownership change. Contrary to the pretreatment standards that EPA has authorized Mississippi to implement (Title 11 Miss. Admin. Code Pt. 6), Chemours did not apply

and obtain a valid pretreatment permit from MDEQ specific to its operations before discharging regulated categorical process wastewater to the POTW.

Area of Concern 2

The discharge standards in the expired pretreatment permit for Outfall 001 are categorical standards that MDEQ adjusted based on an unknown volume of stormwater and do not account for sanitary wastewater or non-contact cooling water. Adjustment of categorical pretreatment standards are only permitted when non-categorical wastewater sources are known and invariable in quantity. However, stormwater is variable by nature, thereby precluding the use of limits adjusted for stormwater dilution per 40 CFR § 403.6(e). Therefore, the discharge standards that MDEQ had applied in the expired pretreatment permit were not reliable for comparison against categorical pretreatment standards.

In addition, the expired pretreatment permit specified that the facility take 24-hour composite samples for phenol, 2-nitrophenol, 4-nitrophenol, and nitrobenzene. However, 40 CFR § 403.12(g)(3) requires that monitoring for these pollutants be done via grab sampling. The expired pretreatment permit also indicated that the limits for these pollutants were to be effective within three years of permit issuance, or by completion of the improvements needed to meet the limits, whichever timeframe came first. However, 40 CFR § 403.6(b) requires that all pretreatment necessary to meet applicable standards be in place upon discharge or within 90 days of beginning to discharge.

Area of Concern 3

Stormwater permit Section ACT5, requirement T-4, requires a topographical map and other site map features. Some components of the facility's SWPPP did not contain the required information stipulated in the stormwater permit.

- The facility's SWPPP includes a topographical map as Figure 1 (refer to Appendix B: SWPPP Figure); however, the topographical features are not legible on this map.
- The site map included as Figure 3 of the facility's SWPPP (refer to Appendix B: SWPPP Figure) did not contain all permit-required features. In addition, the quality of the map is such that it is difficult to discern all the features on the map. Specifically, the map either did not include the following permit-required required features or these features were not discernable due to the quality of the map:
    - Location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff (Section 5.2 of the SWPPP indicates the structural and nonstructural controls implemented at the facility however, the locations of these measures are not shown in the SWPPP map),
    - Location of any stormwater treatment activities,
    - Location of any storm drain inlets,
    - Location of fuel storage and dispensing locations,
    - Location of vehicle/equipment repair, maintenance and cleaning areas,
    - Location of materials storage and handing areas,
    - Location of housekeeping practices, and
    - Stormwater conveyances (ditches, pipes, & swales) (Section 6.0 of the SWPPP

indicates the use of drainage ditches, swales, and basins however, the locations of these conveyances are not shown in the SWPPP map).

- The site map included as Figure 3 of the facility's SWPPP (refer to Appendix B: SWPPP Figure) included facility areas that are no longer active, such as the No. 3 Lagoon (previously connected to an old outfall), which was filled and stabilized with grass at the time of the inspection (refer to Photograph 2).

Area of Concern 4

Stormwater permit Section ACT5, requirement T-2, requires the SWPPP to "identify all activities and significant materials which may potentially pollute storm water discharges...". Portions of the SWPPP were not reflective of the conditions observed during the inspection. The Inspection and Sampling Team noted the following discrepancies between the SWPPP and observed conditions at the facility:

- Section 3.0, Facility Information, only included information about some of the process operations that occur at the facility. Specifically, this section did not discuss the following products that the facility produces: nitric acid, hydrogen, and all Capstone products.
- Section 5.0, Description of Potential Storm Water Pollutant Sources, of the SWPPP does not specifically mention the hydrogen, NDPA, and Capstone process areas; however, the other process areas are specifically mentioned.

Area of Concern 5

Section ACT8, requirement S-2, of the stormwater permit indicates "assess the effectiveness and accuracy of the SWPPP and ensure that the SWPPP is current, up to date, and meets all the requirements..." The 2017 and 2018 Annual SWPPP Evaluation Forms both indicate that the facility did not find any changes warranted to the SWPPP; however, the information noted above in Area of Concern 3 and Area of Concern 4 indicate discrepancies that may warrant changes to the SWPPP. In addition, the Annual SWPPP Evaluation Form specifically includes check boxes for site map elements that are not included in the facility's site map (listed in Area of Concern 3), but the facility checked as being included on the 2017 and 2018 Annual SWPPP Evaluation Forms.

Area of Concern 6

Section ACT8, requirement S-1, of the stormwater permit requires "As part of inspections conducted during or after storm events, a representative sample of storm water should be collected at each outfall in a clean, clear jar and examined in a well lit area.... The results of all jar test inspections shall be documented on the Monthly Visual Jar Test Inspection Form... recipients may use an alternate form to record this information, so long as it includes all of the information on the above referenced form." The facility did not have documentation of monthly jar testing at the time of the inspection. The facility provided documentation of monthly testing of stormwater for pH and TOC; however, these records did not include all the information required on the Monthly Visual Jar Test Inspection Form.

Area of Concern 7

At the time of the inspection, the Inspection and Sampling Team observed solids with some pooling of liquid (refer to Photograph 4). Facility representatives explained that the solids were generated from cleaning of three stormwater sumps, specifically Sumps 21, 22, and 24, which are located at the facility's truck and rail loading/unloading area. The facility provided records of the sump cleaning activities. The records indicated the sump cleaning for all three sumps occurred on October 25 – November 1, 2019 as a result of a five-year sump integrity inspection. The facility also provided the waste characterization form for this waste (refer to Appendix C: Rain Water Storage Tank Solids Waste Characterization Form). The waste characterization form was dated March 2016 and was for "Rain Water Storage Tank Solids"; facility representatives indicated that the solids from the process area stormwater sumps are treated the same as the "Rain Water Storage Tank Solids". The waste characterization form lists the waste as hazardous, based on analytical testing showing that the waste contains aniline, benzene, toluene, phenol, and other chemicals.

The Inspection and Sampling Team conferred with the EPA Region 4 RCRA representative who was present at the inspection. The EPA Region 4 representative indicated the hazardous waste drying pad is exempt under RCRA, per 40 CFR §§ 264.1(g)(6), 265.1(c)(10), and 270.1(c)(2)(v). However, the waste characterization form indicates that the waste is subject to the Benzene Waste Operations National Emission Standards for Hazardous Air Pollutants (NESHAP). The Inspection and Sampling Team did not review the requirement of the Benzene Waste Operations NESHAP.

Area of Concern 8

The pretreatment permit specifies in condition L-2 that "Samples taken in compliance with the monitoring requirements specified in this permit shall be taken at the nearest accessible point after final treatment but prior to actual discharge into the POTW collection system or mixing with non-regulated waste streams." This condition parallels the federal requirement for categorical users in 40 CFR § 403.6(d). In addition, regardless of the permit expiration per Area of Concern 1 and the issue with the pretreatment permit categorical limit adjustments in Area of Concern 2, self-implementing regulations (40 CFR § 403.12) require categorical users like the facility to accurately report compliance with all categorical standards at least twice a year to the control authority.

The location where the Inspection and Sampling Team observed that the facility conducts compliance monitoring for all of the pretreatment permit standards, including the 40 CFR Part 414 categorical standards, is located along the pipe that conveys effluent to the POTW, at a point after the pretreated process discharge commingles with the dilution sources from sanitary wastewater, non-contact cooling water, stormwater, and boiler blow down (refer to Photograph 5 and Photograph 6). The pretreated process wastewater effluent that is subject to the categorical standards is therefore diluted at this location, precluding a direct comparison against both the pretreatment permit per condition L-2 and the applicable 40 CFR Part 414 standards.

The Inspection and Sampling Team observed that the facility has an existing sample tap between the pH Adjustment Tank and the Blend Tank, which is located before the pretreated effluent from the pH Adjustment Tank is commingled with other streams (refer to Photograph 7). This sample tap location appears to be consistent with condition L-2 in the pretreatment permit and 40 CFR § 403.6(d) and, if used by MDEQ and the facility, samples from this location would allow for compliance monitoring of 40 CFR Part 414 categorical standards.

Area of Concern 9

Condition number M-1 of the pretreatment permit requires the facility use monitoring and testing methodology in accordance with 40 CFR Part 136, which requires that samples be preserved at ≤6 degrees Celsius. Facility representatives explained the sampling procedures, indicating that the facility measures the temperature of composite samples when they are removed from the composite sampler's mini refrigerator by inserting a thermometer in the sample. With this method, the facility only knows the temperature of the sample once it's removed from the refrigerator and would not know the temperature of the refrigerator during the entire sampling period to ensure the preservation requirements are met. The Inspection and Sampling Team recommended that the facility monitor temperature by having a thermometer in a jar of water stored in the mini refrigerator.

Area of Concern 10

The pretreatment permit specifies in condition R-1 that "For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall maintain records of all information obtained from such monitoring including: (1) The exact place, date, and time of sampling..." The sample times listed in the facility's grab sampling log for pretreatment permit monitoring were rounded to the nearest hour, as opposed to being recorded as the exact times at which the grab samples were taken.

Area of Concern 11

The following are potential areas of concern from the sampling results:

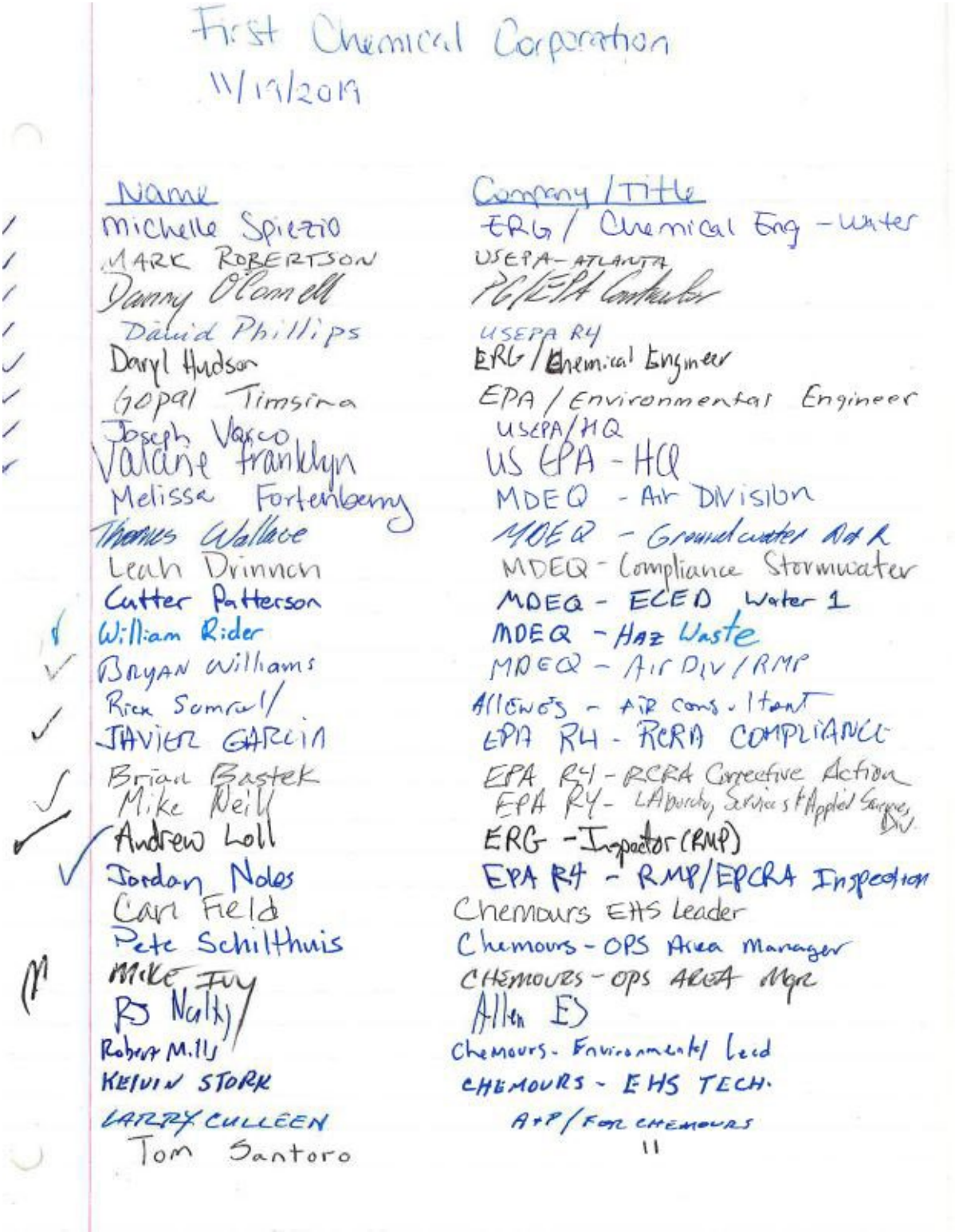
1. The results for the intake (SP-JCW) and all sample points within the Effluent Pretreatment System (SP-CC1, SP-CC2, SP-PH1, and SP-PH2) show that all 28 analytes were non-detect or below the reporting limit. The results for the sample of the effluent to the POTW (SP-POTW) show detection of seven analytes, all with levels below 0.18 µg/L. Since the effluent from the pH Adjustment Tank (SP-PH1 and SP-PH2) was non-detect or below the reporting limit for all 28 analytes, the presence of the seven detected analytes in the effluent to the POTW (SP-POTW) may be from the sanitary wastewater or the non-contact cooling water and boiler blowdown (collected in an outdoor lagoon), which are commingled with the effluent from the pH Adjustment Tank before discharge to the POTW, or from another unknown source such as buildup in equipment or the lagoon that collects non-contact cooling water and boiler blowdown. The source of potable water at the facility is the intake (SP-JCW) (refer to Section 2.8.2).

2. In both samples associated with the facility's stormwater collection system (SP-SWS and SP-6TF), high levels of PFAS were detected relative to the other samples taken at the facility. In the sample taken at the stormwater sump on the southwest corner of the facility property (SP-SWS), which discharges to stormwater Outfall SW002, 18 of the 28 analytes analyzed were detected at levels above the reporting limit. Three of these analytes, PFHxA, PFOA, and 6:2 FTS were detected at 2.7 µg/L, 1.3 µg/L, and 1.5 µg/L, respectively. The stormwater from this sump is discharge through stormwater Outfall SW002 to an unnamed drainage ditch to Bayou Cassotte without treatment. The facility samples the stormwater for pH and TOC before discharging; however, the facility does not sample the stormwater for PFAS.

   The sampling results for the sample taken at the stormwater sump located in the #6 Tank Farm in the Capstone (Unit 6) process area (SP-6TF) showed PFAS analytes at much higher concentrations, with 15 of the 28 PFAS analytes detected above the reporting limit at concentrations ranging from 2.1 µg/L to 150 µg/L. Some of the analytes with the highest concentrations include fluorotelomer-related PFAS, with 4:2 FTS and 8:2 FTS measured at 92 µg/L and 150 µg/L, respectively (note that 6:2 FTS was detected at a high concentration of 53,000 µg/L; however, this value is unreliable due to matrix interference). The facility produces fluorotelomer surfactants in the Capstone (Unit 6) process area (refer to Section 2.6). Stormwater from the sump that was sampled and other stormwater sumps in the Capstone (Unit 6) process area are sent to the Effluent Pretreatment System for treatment before discharge to the POTW. The facility was not discharging stormwater from Capstone (Unit 6) to the Effluent Pretreatment System at the time of the inspection and sampling activities; thus, the samples taken at the Effluent Pretreatment System are not representative of when stormwater from Capstone (Unit 6) is being treated and discharged.

3. The sample from the groundwater recovery trench (SP-GW) shows 15 analytes detected above the reporting limit. Groundwater extracted from the groundwater recovery trench (SP-GW) is treated through the Effluent Pretreatment System before being discharged to the POTW. As discussed in Section 1.3.3, previous groundwater monitoring for PFAS has been conducted by the facility at monitoring wells located on the facility property. These data also show the presence of PFAS in groundwater. Table 3-4 summarizes PFAS concentrations from historic groundwater sampling at the facility (which only included sampling for PFOS, PFOA, and PFHxA) and sampling conducted during the inspection. The data in Table 3-4 show the presence of PFAS in groundwater underneath the site, with varying concentrations over 2010 through the time of the inspection.

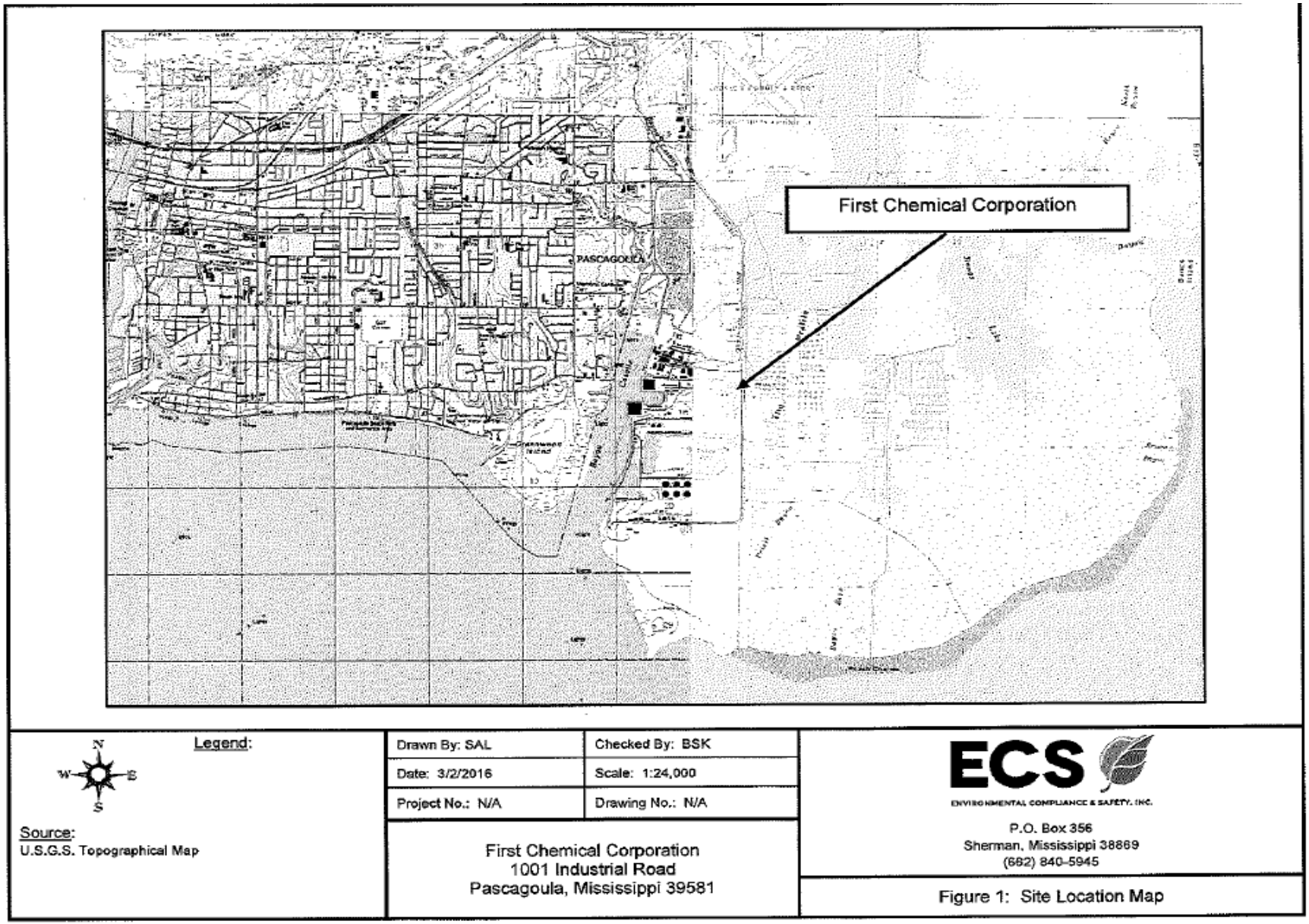
Appendix A: Sign-In Sheet

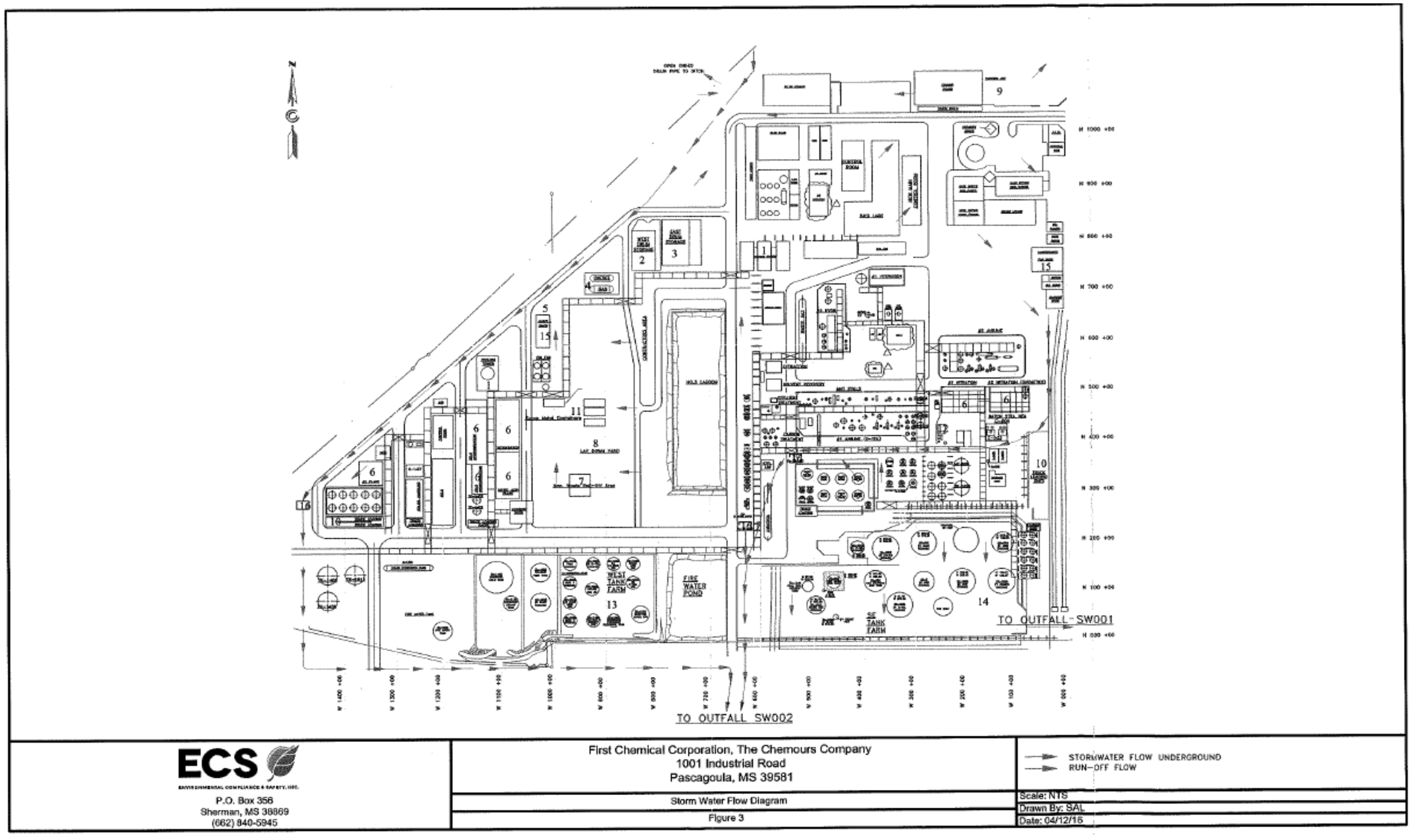


First Chemical Corporation
11/19/2019

Name	Company / Title
Michelle Spiezio	ERG / Chemical Eng - Water
MARK ROBERTSON	USEPA - ATLANTA
Danny Olomell	PG/EPA Contractor
David Phillips	USEPA R4
Daryl Hudson	ERG / Chemical Engineer
Gopal Timsina	EPA / Environmental Engineer
Joseph Vasco	USEPA/HQ
Valaine Franklyn	US EPA - HQ
Melissa Fortenberry	MDEQ - Air Division
Thomas Wallace	MDEQ - Groundwater Ass't R
Leah Drinnon	MDEQ - Compliance Stormwater
Cutter Patterson	MDEQ - ECED Water 1
William Rider	MDEQ - Haz Waste
Bryan Williams	MDEQ - Air Div / RMP
Rick Somrall	Allen's - Air cons. Itant
JAVIER GARCIA	EPA R4 - RCRA COMPLIANCE
Brian Bastek	EPA R4 - RCRA Corrective Action
Mike Neil	EPA R4 - LA Borchy, Services & Applied Science, Inc
Andrew Loll	ERG - Inspector (RMP)
Jordan Noles	EPA R4 - RMP/EPCRA Inspection
Carl Field	Chemours EHS Leader
Pete Schilthuis	Chemours - OPS Area Manager
Mike Fry	CHEMOURS - OPS AREA Mgr
RS Nalty	Allen ES
Robert Mills	Chemours - Environmental Lead
KELVIN STORK	CHEMOURS - EHS TECH.
LARRY CULLEEN	A+P / FOR CHEMOURS
Tom Santoro	11

Appendix B: SWPPP Figures 1 and 3


First Chemical Corporation
PASCAGOULA
N
W
E
S
Legend:
Source:
U.S.G.S. Topographical Map
Drawn By: SAL
Checked By: BSK
Date: 3/2/2016
Scale: 1:24,000
Project No.: N/A
Drawing No.: N/A
First Chemical Corporation
1001 Industrial Road
Pascagoula, Mississippi 39581
ECS
ENVIRONMENTAL COMPLIANCE & SAFETY, INC.
P.O. Box 356
Sherman, Mississippi 38869
(662) 840-5945
Figure 1: Site Location Map


N
OPEN DRAIN DRUM RINSE TO DITCH
WEST DRUM STORAGE
EAST DRUM STORAGE
CONTRACTORS AREA
WWTP LAGOON
WEST TANK FARM
FIRE WATER POND
SE TANK FARM
TO OUTFALL SW001
TO OUTFALL SW002
ECS
ENVIRONMENTAL COMPLIANCE & SAFETY, INC.
P.O. Box 356
Sherman, MS 38869
(662) 840-5945
First Chemical Corporation, The Chemours Company
1001 Industrial Road
Pascagoula, MS 39581
Storm Water Flow Diagram
Figure 3
STORMWATER FLOW UNDERGROUND
RUN-OFF FLOW
Scale: NTS
Drawn By: SAL
Date: 04/12/16

Appendix C: Rain Water Storage Tank Solids Waste Characterization Form

Revised 9/23/2011

First Chemical Corporation

Waste Characterization Form

Profile # PAS-FCC-285 (fcc#263)

External Profile #

Control Dates
Issued: 2/2/16
Reviewed:
Revised: 3/31/16

A. General Information

GENERATOR FACILITY

Generator: First Chemical Corporation
SBU: DCSE
Site Contact: Kelvin Stork
Address: 1001 Industrial Road
City: Pascagoula
State: MS Zip: 39581
Phone #: 228-938-2243 Fax #: 228-938-1702
E-Mail:
USEPA ID#: MSD033417031
State ID#:
Charge Code:

B. Waste Identification Waste Name: Rain Water Storage Tank Solids

Process Knowledge [X] Yes [ ] No Analytical [X] Yes [ ] No Analytical Attached [ ] Yes [X] No

Description of Process Generating Waste: Tank Cleaning

State Waste ID Number:

C. Regulatory Information

Is this a USEPA hazardous waste? [X] Yes [ ] No

Is this an acutely hazardous waste (40 CFR 261.31 and 33) [ ] Yes [X] No

List the USEPA hazardous waste codes. Specify the nature of any D003 waste in section H(1): K083,K104, D001, D018, D036,F005

List any State Waste Codes or other state designations:

Check (X) all regulations that apply:

[ ] CERCLA Regulated (Superfund) Waste	[ ] Medical Waste	[ ] Lab Pack (40 CFR 268)
[X] Subpart CC Regulated (40 CFR 264)	[ ] TSCA Regulated	[ ] Hazardous Debris (Subject to alternative LDR treatment standards)
[ ] Ozone Depletion (40 CFR 82)	[ ] FIFRA Regulated	[ ] OLM (oil-like material 40 CFR 112)

Have all 40 CFR Part 261 Appendix VIII Compounds been listed/considered? [X] Yes [ ] No

Is this waste stream subject to a NESHAP/MACT Standard? Yes [X] No [ ]

If yes, please list which standard (i.e. Benzene NESHAP, HON Subpart G) BENZENE

D. General Characteristics (at 70°F unless otherwise specified)

COLOR: Black

ODOR [ ] None [X] Mild [ ] Strong

[X]	Liquid 0-30 %		PHASES
[X]	Solid 70_10 %	[ ]	Single Layer
[ ]	Sludge %	[X]	Double Layer
		[ ]	Multi-Layer

Does the waste contain liquids per the paint filter test? Yes [X] No [ ]

Is waste a soil and/or a debris? No [X] Yes [ ]

[ ] Wastewater (<1% TOC & <1% TSS) [X] Non-Wastewater as defined in 40 CFR 268.2

E. Handling Instructions If special handling techniques are required, such as PPE, spills, fire response, etc.:

Will waste clog a 1/16" nozzle? [X] Yes [ ] No

F. Shipping Information

UN or NA ID Number: UN2926 RQ: D018,K104

DOT PROPER SHIPPING DESCRIPTION: Waste Flammable Solids, toxic,organic, n.o.s.(Toluene,Aniline)

Hazard Class Number: 4.1 6.1 Packing Group Number: II ERG #: 134

DOT Placard: 2926 DOT Labels: flammable solid, Toxic [ ] Marine Pollutant

Shipping Containers

Volume of shipment		Frequency	Container Type	Material of Construction	Container Size	
36,000	LBS	As Generated	Roll-Off	Metal	20	cu yds

If a drum, is it open top or bung? _____ Type of absorbent, if any? Cellulose

First Chemical Corporation

Profile # PAS-FCC-285

G. Chemical Composition - Sum of the Typical should equal 100%.

All Constituents must be specifically identified and physical composition listed separately (e.g., toluene, benzene)
Include all constituents >1%, or >0.1% for carcinogens, or >100 ppm for Appendix VIII.

CAS Number	Chemical Name	Typical		Min		Max		Exp. Limit OSHA/ACGIH
	aniline	0.0065	%	0	%	2	%	
	benzene	0.03	%	0	%	1	%	
	toluene	1.5	%	0	%	2	%	
	phenol	0.0016	%	0	%	0.5	%	
	nitrobenzene	0.035	%	0	%	5	%	
	2,4 dinitrophenol	4.3	%	0	%	10	%	
	2,6 dinitrophenol	0.5	%	0	%	1	%	
	2-nitrophenol	0.005	%	0	%	0.5	%	
	4-nitrophenol	1.0409	%	0	%	1.5	%	
	toluidines	0.006	%	0	%	1	%	
	trinitrophenol	0.075	%	0	%	1	%	
	mononitrotoluenes	2.5	%	0	%	5	%	
	misc. solids (dirt,carbon, ect...)	89	%	55	%	99	%	
	water	1.0	%	0	%	25	%	

100 % TOTAL

Has a waste specific MSDS been attached? [ ] Yes [X] No MSDS # _____
Has a combination of component MSDS's been attached? [ ] Yes [X] No

H. (1) Hazardous Characteristics and Other Components - Section must be completed.

Check (X) all that apply.

[ ]	Acid Reactive	[ ]	Water Reactive
[ ]	Alkaline Reactive	[ ]	Air Reactive
[X]	Carcinogen (or suspect)	[ ]	Pyrophoric
[X]	Cyanosis Causing Chemicals	[ ]	Biological/Infectious
[ ]	Poison Inhalation Hazard (DOT)	[ ]	Dust Hazard
[ ]	Polymerizable	[ ]	Asbestos
[ ]	Peroxides/Oxidizers	[ ]	Ignitable
[ ]	Explosive/Shock Sensitive	[ ]	Corrosive
[ ]	Reactive Cyanides/Sulfides	[ ]	Radioactive
[ ]	Pesticides/Herbicides/ Rodenticides	[ ]	Other (define in comments)

(2) Physical Characteristics

	Minimum	Maximum	Actual
pH	2	4	2.7
Specific Gravity			
Viscosity (cP 70° F)			
BTU/lb	5000	10000	6500
Vapor Pressure (atm 70°F)			
Flash Point (closed cup °F)	100	200	>140

(3) Trace Constituents

[ ] Check here if none of the constituents are present

	Conc	Units
Antimony (Sb)		
Arsenic (As)		
Barium (Ba)		
Beryllium (Be)		
Cadmium (Cd)		
Chromium (Cr)		
Cobalt (Co)		
Copper (Cu)		
Lead (Pb)		
Manganese (Mn)		
Mercury (Hg)		
Nickel (Ni)		
Selenium (Se)		
Silver (Ag)		
Thallium (Tl)		
Vanadium (V)		
Benzene	300	ppm
Dioxin/Furans		
Polycyclic Aromatics		
Polybrominated Biphenyls		
PCB's		
Other		

Generator Comments:

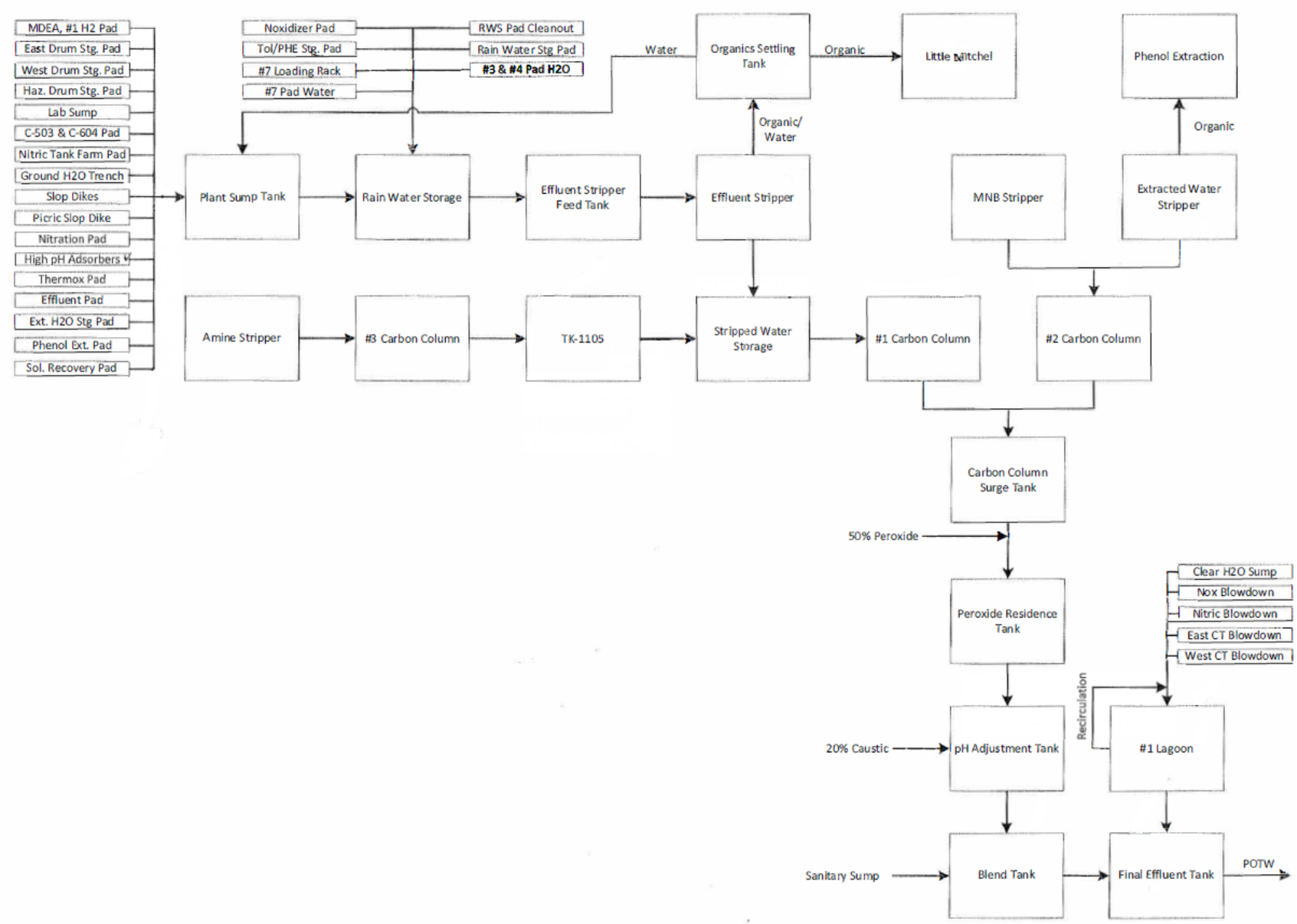
Cyantotic materials must be handled with care for personnel protection. No leather gloves or boots. Recommended Zytron level 300 or higher suits and check for respiratioy required protection based on air sampling data.

Generator Profile Certification:

I certify that the information provided in this document is true, accurate, and complete to the best of my knowledge.

Kelvin Stork, EHS Technician	31-Mar-16	
Name & Title (typed or printed)	Date	Generator's Authorized Signature

Appendix D: Wastewater Flow and Treatment Diagram


MDEA, #1 H2 Pad
East Drum Stg. Pad
West Drum Stg. Pad
Haz. Drum Stg. Pad
Lab Sump
C-503 & C-604 Pad
Nitric Tank Farm Pad
Ground H2O Trench
Slop Dikes
Picric Slop Dike
Nitration Pad
High pH Adsorbers
Thermox Pad
Effluent Pad
Ext. H2O Stg Pad
Phenol Ext. Pad
Sol. Recovery Pad
Noxidizer Pad
Tol/PHE Stg. Pad
#7 Loading Rack
#7 Pad Water
RWS Pad Cleanout
Rain Water Stg Pad
#3 & #4 Pad H2O
Water
Organics Settling Tank
Organic
Little Mitchel
Phenol Extraction
Organic/ Water
Organic
Plant Sump Tank
Rain Water Storage
Effluent Stripper Feed Tank
Effluent Stripper
MNB Stripper
Extracted Water Stripper
Amine Stripper
#3 Carbon Column
TK-1105
Stripped Water Storage
#1 Carbon Column
#2 Carbon Column
Carbon Column Surge Tank
50% Peroxide
Peroxide Residence Tank
Clear H2O Sump
Nox Blowdown
Nitric Blowdown
East CT Blowdown
West CT Blowdown
Recirculation
20% Caustic
pH Adjustment Tank
#1 Lagoon
Sanitary Sump
Blend Tank
Final Effluent Tank
POTW

Appendix E: Sample Quality Assurance/Quality Control Discussion

Sample Quality Assurance/Quality Control Discussion

ALS Environmental was selected as the laboratory for these analyses because it operates a National Environmental Laboratory Accreditation Certification (NELAC) certified laboratory for the method used in this sampling episode.

For this sampling episode, ERG followed all Quality Assurance Project Plan sampling requirements.

Sample Receipt Condition

The samples were received for analysis at ALS Environmental in good condition and consistent with the accompanying chain of custody form. The field samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Holding Times

All holding times were met.

Laboratory Control Samples

All analytes measured in the two method blanks were below the reporting limit.

The laboratory conducted analyses on two sets of laboratory control samples (LCS), which each had a duplicate LCS. ERG reviewed the RPD for each analyte between the LCS and corresponding duplicate LCS for each set and found that there were no analytes with an RPD greater than 30 percent in either set.

All PFAS analytes measured in the method blanks were below the reporting limit. The percent recovery for all PFAS analytes were within control criteria, except for PFBS on one laboratory control sample and one method blank. The laboratory case narrative indicates "the criteria are default values are temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure."

Matrix Spikes and Duplicates

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate; the LCS and duplicate LCS were analyzed and reported (discussed above) in lieu of the matrix spike analyses.

All percent recoveries and RPDs were within acceptance criteria except for the following discussions below.

- Surrogate recovery was outside of laboratory control limits for the below samples and analytes. Laboratory case narrative indicates "Assuming the native analytes performed similar to the labeled analogs, the effect on the reported results was minimal."

Sample	Analyte
SP-JCW	4:2 FTS
SP-GW	8:2 FTS

- Surrogate recovery was outside of laboratory control limits for the below samples and analytes. Laboratory case narrative indicates "The limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure."

Sample	Analyte
SP-6TF	PFBS, PFOA
Laboratory Control Sample KQ1917957-02	PFBS
Method Blank KQ1917957-03	PFBS

- Surrogate recovery for 6:2 FTS in sample SP-6TF exceeded the upper control limit due to matrix interference. The sample was reanalyzed with similar results, with a 2,451 percent and 2,437 percent recovery for the two analyses of sample SP-6TF. Due to the high percent recovery, the reported value for this analyte in SP-6TF is affected (the result is likely higher than the actual value). The result for this analyte in SP-6TF is not acceptable for use based on the high percent recovery.

Additional Quality Notes from the Laboratory

The laboratory results included the following additional quality notes. These notes are replicated below and do not indicate any issues that would make the data unacceptable for use.

Samples SP-SWS, SP-GW, 17249-MW-112C, 17249-MW-112B and 17249-MW-110A require dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

The control criteria were exceeded for one or more surrogates in Continuing Calibration Verification (CCV) KQ191838-01. The recoveries of the associated native analytes were within control criteria, which indicated the analysis was in control. No further corrective action was appropriate.

Sample SP-6TF required dilution due to the presence of elevated levels of target analytes. The reporting limits are adjusted to reflect the dilution.

Conclusion

Based on ERG's review of the available quality control data, the analytical data provided by the laboratory are acceptable for use in this report, except for the result for the analyte 6:2 FTS in sample SP-6TF due to matrix interference.

Appendix F: Chain of Custody Form

Chain of Custody

ADDRESS 1317 South 13th Ave., Kelso, WA 98626
PHONE 1 360 577 7222 FAX 1 360 636 1068
Part of the ALS Group A Campbell Brothers Limited Company

Work Order No.: K1911ade

Project Manager:	Chris Leaf	Bill to:	PO NUMBER: 0352.02.002/22
Client Name:	ERG - Michelle Spiezio	Company:	ERG
Address:	14555 Avion Pkwy, Suite 200	Address:	14555 Avion Pkwy, Suite 200
City, State ZIP:	Chantilly, VA 20151	City, State ZIP:	Chantilly VA 20151
Email:	michelle.spiezio@erg.com Phone: 703-633-1709	Email:	michelle.spiezio@erg.com
Project Name:			
Project Number:			
P.O. Number:			
Sampler's Name:	Michelle Spiezio		

SAMPLE RECEIPT

Temperature (°C):			Temp Blank Present		
Received Intact:	Yes	No	N/A	Wet Ice / Blue Ice	
Cooler Custody Seals:	Yes	No	N/A	Total Containers:	
Sample Custody Seals:	Yes	No	N/A		

REQUESTED ANALYSIS

TAT: ☑ Routine; ☐ Same Day ***; ☐ Next Day ***; ☐ 3 Day; ☐ 5 Day

*** Please call for availability

Due Date:

	Sample Identification	Matrix	Date Sampled	Time Sampled	Lab ID	No. of Containers	S33 m	Comments
1	SP-POTW	water	11/21/19	943	Kelso	2	✓	
2	SP-SWS	water	11/21/19	957	Kelso	2	✓	
3	SP-CC1	water	11/21/19	1026	Kelso	4	✓	
4	SP-CC2	water	11/21/19	1032	Kelso	2	✓	
5	SP-PH1	water	11/21/19	1037	Kelso	2	✓	
6	SP-PH2	water	11/21/19	1038	Kelso	2	✓	
7	SP-LTF	water	11/21/19	1108	Kelso	2	✓	
8	SP-FB Field blank	water	11/21/19	1115	Kelso	2	✓	
9	SP-SCW	water	11/21/19	1123	Kelso	2	✓	
10	SP-GW	water	11/21/19	1140	Kelso	2	✓	
11	trip blank	water	N/A	N/A	Kelso	1	✓	

Dissolved	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr
Total	Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Tl, V, Zn, Zr

Additional Methods Available Upon Request

RELINQUISHED BY			RECEIVED BY		
Print Name	Signature	Date/Time	Print Name	Signature	Date/Time
Michelle Spiezio	Michelle Spiezio	11/21/19 12:30	FWOF		11/22/19 0940

ALS

Cooler Receipt and Preservation Form

PC CV

Client ERG

Service Request K19 11046

Received: 11/22/19 Opened: 11/22/19 By: AH Unloaded: 11/22/19 By: AH

1. Samples were received via? *USPS* (*Fed Ex*) *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____
3. Were custody seals on coolers? NA (N) If yes, how many and where? 2 front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
-0.1	-0.1	—	—	0.3	396	104087	7782 0925 8180	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
7. If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed* NA (Y) N
8. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
9. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
10. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
11. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

7/25/16

Page ____ *of* ____

Appendix G: Photograph Log

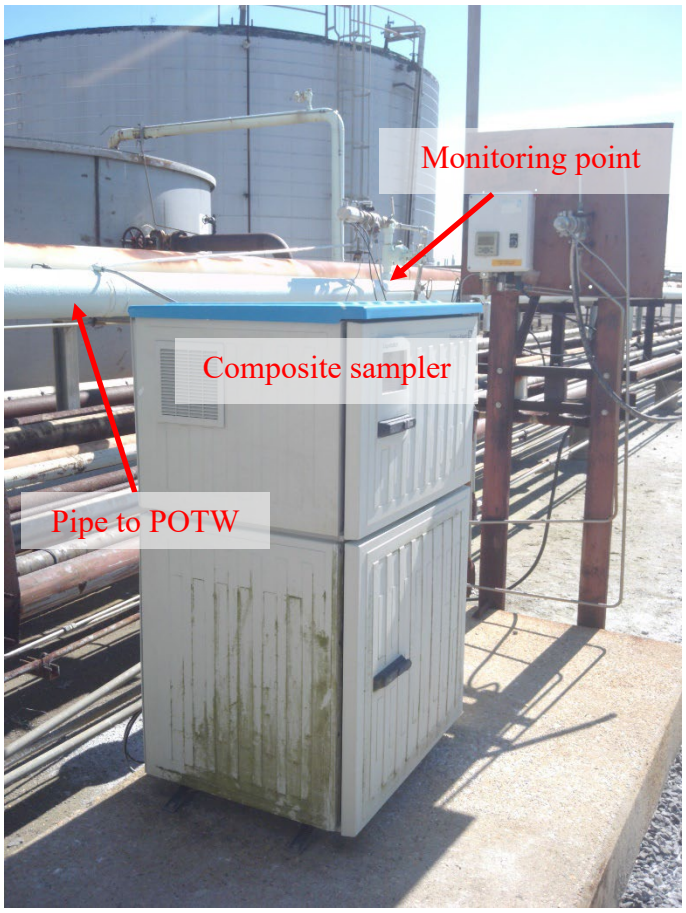
Inspection Photographs

Photograph 1. Bottom pipe through which material is transferred from vessel RG-6500 to RG-5000 in the Capstone (Unit 6) operations. Operators visually inspect the material transfer through the backlit glass pipe segment.

Photograph 2. Former lagoon that discharged through an old (closed) outfall.

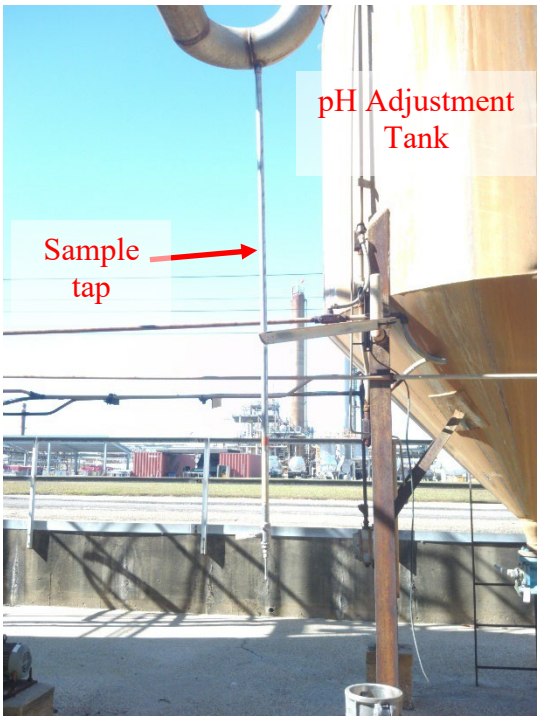
Photograph 3. Hazardous waste drying pad with solids from Sumps 21, 22, and 24 (truck and rail loading/unloading area).

Photograph 4. Closer view of the solids being dried on the hazardous waste drying pad at the time of the inspection.



Photograph 5. Compliance monitoring point for discharges to the POTW.

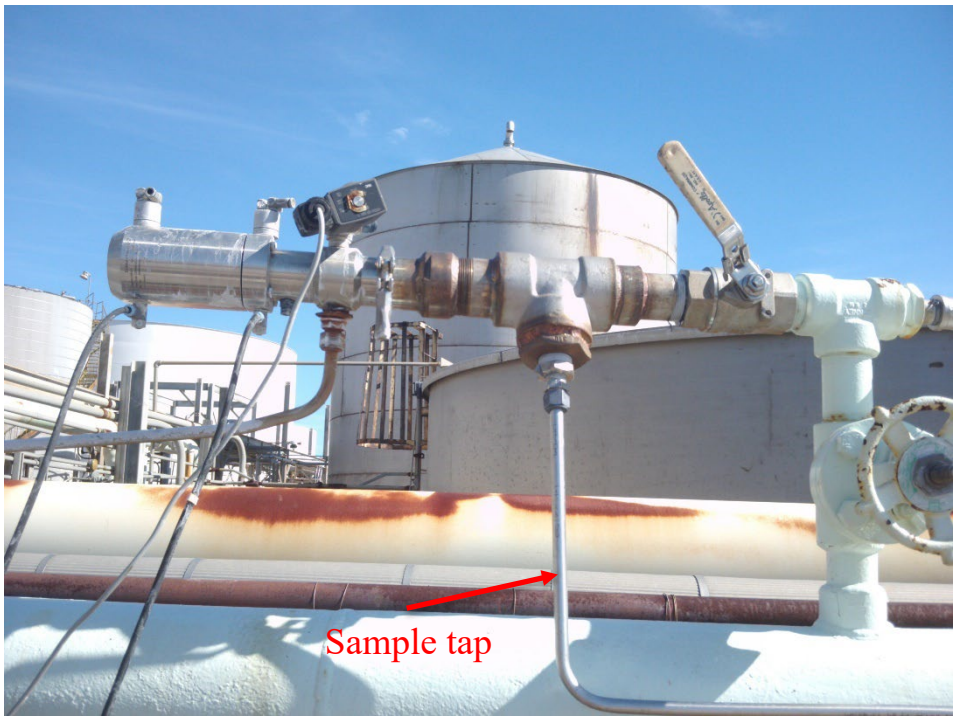
Photograph 6. Closer view of the monitoring point in Photograph 5.



Photograph 7. Sample tap located after the pH Adjustment Tank, before the treated wastewater is mixed with sanitary wastewater, non-contact cooling water, and boiler blowdown.

Sampling Photographs

Sample ID: SP-POTW	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Discharge to POTW



Photograph 8. Sample point for SP-POTW.

Sample ID: SP-SWS	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Stormwater sump on the southwest corner of the facility (discharges to stormwater Outfall SW002)

Note: The Inspection and Sampling Team did not photograph the sample point because the area was electrically classified.

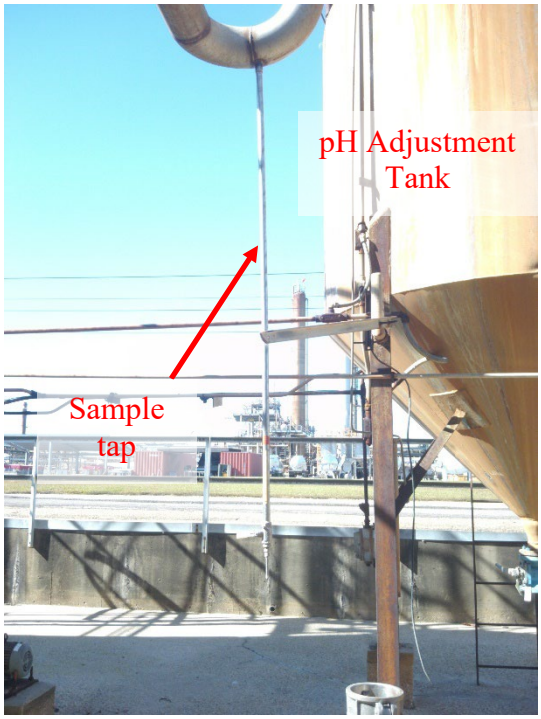
Sample ID: SP-CC1	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Effluent from Carbon Column 1 in the Effluent Pretreatment System

Note: The Inspection and Sampling Team did not photograph the sample point because the area was electrically classified.

Sample ID: SP-CC2	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Effluent from Carbon Column 2 in the Effluent Pretreatment System

Note: The Inspection and Sampling Team did not photograph the sample point because the area was electrically classified.

Sample ID: SP-PH1 and SP-PH2 (duplicate samples were taken at same location for quality assurance)	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Effluent from pH Adjustment Tank in the Effluent Pretreatment System



Photograph 9. Sample tap after the pH Adjustment Tank, used for SP-PH1 and SP-PH2.

Sample ID: SP-6TF	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Stormwater sump for the #6 Tank Farm in the Capstone process area (Unit 6)

Note: The Inspection and Sampling Team did not photograph the sample point because the area was electrically classified.

Sample ID: SP-JCW	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Intake for process water from the Jackson County Water Authority

Note: The Inspection and Sampling Team did not photograph the sample point because the area was electrically classified.

Sample ID: SP-GW	**Date sample taken:** 11/21/2019
Sample taken by: Danny O'Connell	**Sample location:** Groundwater recovery trench

Note: The Inspection and Sampling Team did not photograph the sample point because the area was electrically classified.